

**A STUDY ON NEERKKURI NEIKKURI
DIAGNOSTIC METHODOLOGY IN
UTHIRAVATHASURONITHAM-
RHEUMATOID ARTHRITIS**

(DISSERTATION SUBJECT)



For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH V - NOINAADAL DEPARTMENT

NATIONAL INSTITUTE OF SIDDHA

CHENNAI 47

AFFILIATED TO THE TAMIL NADU Dr. M.G.R.MEDICAL UNIVERSITY

CHENNAI – 32

APRIL - 2013

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ACKNOWLEDGEMENT

I express my sincere thanks to the **Secretary, Department of AYUSH,** Health & Family Welfare, New Delhi.

I express my sincere thanks to the **Vice-chancellor,** The Tamil Nadu Dr. M.G.R. Medical University, and Chennai.

I express my gratitude to **Prof.Dr.K.Manickavasagam M.D (S),** Director, National Institute of Siddha, Chennai, for granting permission to undertake a study in this dissertation topic and also for providing all the basic facilities in order to carry out this work.

I would like to express my profound sense of gratitude to **Prof.Dr.M.Murugesan, M.D (S),** Former Dean, Head of the Department, Nanju Nool, National institute of Siddha, Chennai for the valuable guidance to complete my project.

I express my sincere thanks to **Prof. Dr.R.S.Ramasamy, M.D (S), Director General, CCRS** and Former Hospital Superintendent, National Institute of Siddha, Chennai.

I take this opportunity to express my deep sense of gratitude, dignity and diligent salutations to **Dr.M.Logamanian M.D (S), Ph.D., Emeritus Professor** of The Tamil Nadu Dr. M.G.R. Medical University ,Former Head of the department, Noi Naadal, National Institute of Siddha, Chennai-47, for his most valuable guidance to undertake this dissertation study.

I take this opportunity to acknowledge the encouragement offered to me by the HOD's of other departments from time to time.

I express my deep sense of gratitude to **Dr.G.J.Christian M.D (S),** Associate Professor, Department of Noi Naadal, National Institute of Siddha, for his guidance, memorable support and ceaseless encouragement in carrying out this work.

I express my grateful thanks to **Dr.S.Elansekaran M.D (S),** Lecturer, Department of Noi Naadal, National Institute of Siddha, for his guidance, moral support and encouragement.

I express my deep sense of gratitude to **Dr.M.Ramamurthy, M.D (S)**, Lecturer, Department of Noi Naadal, National Institute of Siddha, for his guidance, moral support and encouragement.

I express my sincere thanks to **Dr. RajaveluIndira, M.D (Pathology)**, Head of the Department of Pathology, Madras Medical College, for her valuable support during this work.

I express my sincere thanks to **Dr.J.Sahayaraj, M.D (Pathology)**, Professor of Pathology, Kilpauk Medical College, for his valuable and moral support during this work.

I express my sincere thanks to **Dr.G.Subburaghavalu, M.D (General Medicine)**, Assistant Professor, Department of Medicine, Madras Medical College, Chennai for his valuable support during this work.

I wish to thank **Dr.A.Muthuvel M.Sc (Bio-chemistry), Ph.D.**, Assistant Professor of Biochemistry, National Institute of Siddha for his valuable support during this work.

I wish to thank **Dr.M.Maruthu Ramachandiran, M.Sc (Microbiology), Ph.D.**, Assistant Professor of Microbiology, National Institute of Siddha for his valuable support during this work.

I wish to thank **Mr.M.Subramaniam, M.Sc (Statistics), SRO** in National Institute of Siddha for his valuable support during this work.

I express my sincere gratitude to library incharge **Dr.K.Suresh, M.D (S)**, Lecturer, NIS and library staff of this Institution for their kindly help throughout the project work.

I wish to thank laboratory staff, Hospital staff & Administrative staff.

I thank the library authorities of Dr.Ambedkar library, Roja Mutthiah library, CCRI library and Dr. M.G.R. Medical University from where I derived much of the literary support.

I dedicate my dissertation work to my beloved **Father Mr.D.Pethaiyah, Mother Mrs.P.Kamalambigai and Sister Miss P.Ramya.**

1. INTRODUCTION

Siddha is a way of life morally and ethically founded upon that was instituted by Siddhars to attain the ultimate aim of reaching the Almighty. The hurdles they faced in attaining the target were the diseases of body and soul. These illnesses were overcome by Siddhars in Siddha systematic approach. Siddhars viewed every disease under the roof of, diagnostic technique, finding the root causes, clinical features and treatment methodologies. A good diagnosis can make a good treatment protocol in any disease. Siddha based on this fundamental truth as given important to diagnostic methodologies to approach a patient with illness.

Fundamentals of human body composed of Uyirhathu, Udalthath , Panchabootham. Any alterations in these principles can result in disease which is revealed in humours like Vali, Azhal and Iyam. Humoural basis of disease diagnosis is needed to select humour based treatment, which can result in better prognosis. Thiruvalluvar signifies this way of approach in the following lines

“மிகினும் குறையினும் நோய் செய்யும் நூலோர்
வளி முதலா எண்ணிய மூன்று”

To diagnose the alteration of humour, eight diagnostic tools are used in Siddha. They are Naadi, Sparism, Naa, Niram, Mozhi Vizhi, Malam and Moothiram. Among these, many literatures are available in present day regarding pulse and urine analysis.

Urine examination is one of those ‘*Envagai thervugal*’ . Urine examination has got demonstrable objectivity with clear cut tangible rules laid down by Siddhars which will reduce the variations in examination between one physician and another .

Urine is an ultra filtrate of blood. Urine tests are very useful for providing information to assist in the diagnosis, monitoring and treatment of a wide range of diseases. In such cases, the abnormal conditions either due to metabolic or systemic or local conditions, the normal physico-chemical nature of urine is altered. To diagnose a disease and to get a hint on prognosis, urine analysis has been given

much emphasis in Siddha. It includes physical examination such as colour, specific gravity, odour, froth and volume. In addition a special procedure called as Neikkuri (Oil in urine sign) is in practice in Siddha system, in which the shape and spreading nature of Gingelly oil drop over an urine sample surface is observed.

Siddha way of urine analysis is an easier and individualistic technique with high reliability than the other parameters. This reliable, simpler, but effective diagnostic methodology can be utilised to approach varying medically challenging diseases of patients in the present world. One such disease is Rheumatoid arthritis.

Rheumatoid arthritis (RA) is the most common persistent inflammatory arthritis, occurring throughout the world and in all ethnic groups. The prevalence of RA is approximately 0.8% of the world population. In India it is quite similar to that reported from the developed countries. It is higher than that reported from China, Indonesia, Philippines and rural Africa. In India a house-to-house survey of a rural population near Delhi was conducted by two trained health workers. The target population comprised 44,551 adults (above 16 years of age). A response rate of 89.5% was obtained and 3393 persons were listed as possible cases of RA by the health workers. Of these, 299 satisfied the revised ARA criteria for the diagnosis of RA, giving a prevalence of 0.75%.

All the sensitive and specific laboratory investigations for Rheumatoid arthritis cost very high. Hence it is not helpful for all classes of people. On the other hand, though Siddha states Neerkkuri Neikkuri procedure as good diagnostic tool, proper observation and studies about Neerkkuri Neikkuri for Rheumatoid arthritis have not yet been done. The author hopes that this dissertation work can fill up this lacuna to a good extent.

2. AIM AND OBJECTIVES

2.1 AIM:

To develop the Neerkkuri Neikkuri examination in Siddha system as a cost effective, yet powerful tool to diagnose and appropriate prognosis of condition Uthira vatha suronitham/ Rheumatoid Arthritis.

2.2 OBJECTIVES:

- ❖ To document the diagnostic patterns of Neerkkuri Neikkuri in Uthira Vatha Suronitham/ Rheumatoid Arthritis.
- ❖ To observe for any significant Neerkkuri Neikkuri pattern, which may provide a clue in the diagnosis, prognosis or its complications.
- ❖ To establish the review of literature.
- ❖ To compare the Neerkkuri Neikkuri patterns of Uthira Vatha Suronitham patients with Modern parameters.
- ❖ To elucidate the shapes of Neerkkuri Neikkuri on the three consecutive days.

A.SIDDHA PHYSIOLOGY

3. A.1. SUGARANA NILAI (PHYSIOLOGICAL STATE) IN SIDDHA MEDICINE

The five basic elements, namely Aagayam (Space), Kaal (Air), Thee (Fire), Neer (Water), and Mann (Earth) are the building blocks of all the physical and subtle bodies existing in this whole universe. These are called as the ‘Adippadai Boothams’ (Basic Elements) (or) ‘Panchaboothams’.

These five elements together constitute the human body and origin of other material objects are explained as Panchaekarana (Mutual Intra Inclusion). None of these elements could act independently by themselves. They could act only in co-ordination with other four elements. All the living creatures and the non-living things are made up of these five basic elements. The five basic elements form the connecting link between the Microcosm (Man) and Macrocosm (World). This concept is evident from Siddhar's lines,

“அண்டத்தில் உள்ளதே பிண்டம்;

பிண்டத்தில் உள்ளதே அண்டம்”

Any change in the universe due to natural or unnatural causes will create changes in human systems. For example the natural disorders like cyclone, heavy rain, mist and scorching sun or man created impurities of air and water will create changes both in the atmosphere and in the human body. Hence the change in the elementary conditions of external world has its corresponding change in the human organs.

உலகம் பஞ்ச பூதம்

"நிலம் நீர்தீவளி விசும்போடைந்தும்

கலந்தமயக் கமுலகம் மாதலின்"

-தொல்காப்பியம்

தேகம் பஞ்ச பூதம்

"தலங்காட்டி இந்தச் சடமான ஐம்பூதம்
நிலங்காட்டி நீர் காட்டி நின்றிடுந் தீ காட்டி
வலங்காட்டி வாயுவால் வளர்ந்தே இருந்தது
குலங்காட்டி வானில் குடியாய் இருந்ததே".

-பதினென் சித்தர் நாடி சாஸ்திரம்

As per the above lines, the universe and the human body are made of five basic elements.

3. A.2. THE 96 BASIC PRINCIPLES (96 THATHUVAM)

According to Siddha system of medicine, 'Thathuvam' is considered as a science that deals with basic functions of the human body. Siddhars described 96 principles as the basic constituents of human body that include physical, physiological, psychological and intellectual components of an individual. These 96 Thathuvams are considered to be the cause and effect of our physical and mental well-being. The Thathuvam is the author of the conception of human embryo on which the theory of medicine is based.

1. BOOTHAM – 5 (*ELEMENTS*)

1. **Aagayam** - Firmament
2. **Vaayu** - Flatus(Air)
3. **Thee** - Fire
4. **Neer** - Fluid(Water)
5. **Mann** - Firm Ground(Earth)

2. PORI – 5 (*SENSE ORGANS*)

1. **Sevi (Ear)** -a structural component of 'Aagayam' bootham
2. **Thol (Skin)** -a structural component of 'Vaayu' bootham
3. **Kann (Eye)** -a structural component of 'Thee' bootham
4. **Naakku (Tongue)** -a structural component of 'Neer' bootham
5. **Mookku (Nose)** -a structural component of 'Mann' bootham

3. PULAN – 5 (*FUNCTIONS OF SENSE ORGANS*)

1. **Kaetal** -Hearing, a functional component of Aagayam bootham
2. **Thoduthal** -Touch, a functional component of Vaayu bootham
3. **Paarthal** -Vision, a functional component of Thee bootham
4. **Suvaithal** -Taste, a functional component of Neer bootham
5. **Nugarthal** -Smell, a functional component of Mann bootham

4. KANMENTHIRIYAM – 5 (*MOTOR ORGANS*)

1. **Vaai (Mouth)** - Speech is delivered in relation with Space element.
2. **Kaal (Leg)** -Walking takes place in concordance with Air element.
3. **Kai (Hands)** -Giving/Taking are carried out with the influence of Fire element.
4. **Eruvaai (Rectum)** -The excreta is eliminated in association with Water element.
5. **Karuvaai (Sex Organs)** -The Sexual acts are carried out in association with the earth element.

5. KARANAM – 4 (*INTELLECTUAL FACULTIES*)

1. **Manam** - Thinking about something
2. **Bhuddhi** - Deeply analyzes the same
3. **Agankaaram** - Determination to do the same
4. **Siddham** - Accomplishment of the determined Thing

6. ARIVU – 1 (*WISDOM OF SELF REALIZATION*)

To analyze good and bad

7. NAADI – 10 (*CHANNELS OF LIFE FORCE RESPONSIBLE FOR THE DYNAMICS OF PRANAN*)

1. **Idakalai** - Starts from the right big toe, runs criss-cross to end in the left nostril
2. **Pinkalai** - Starts from the left big toe, runs criss-cross to end at the right nostril.
3. **Suzhumunai** -Starts from Moolaathaaram and extends upto centre of head
4. **Siguvai** - Located at the root of tongue; it helps in the swallowing of food and water
5. **Purudan** -Located in right eye.

- 6. **Kanthari** -Located in left eye.
- 7. **Atthi** -Located in right ear.
- 8. **Allampudai** -Located in left ear.
- 9. **Sangini** -Located in genital organ
- 10. **Gugu** -Located in ano-rectal region

8. VAAYU – 10 (VITAL NERVE FORCE WHICH IS RESPONSIBLE FOR ALL KINDS OF MOVEMENTS)

1. Uyir kaal (Piraanan)

This is responsible for the respiration of the tissues, controlling knowledge, mind and five sense organs and digestion of the food taken in.

2. Keel nokku kaal (Abanan)

It lies below the umbilicus. It is responsible for the downward expulsion of stools and urine, ejaculation of semen and menstruation.

3. Paravu kaal (Viyanan)

This is responsible for the motor and sensory function of the entire body and the distribution of nutrients to various tissues.

4. Mael nokku kaal (Uthanan)

It originates at Utharakini. It is responsible for digestion, absorption and distribution of food. It is responsible for all the upward movements.

5. Samaanan (Nadu kaal)

This is responsible for the neutralization of the other 4 Valis i.e. Piranan, Abanan, Viyanan and Uthanan. Moreover it is responsible for the nutrients and water balance of the body.

6. Naagan

It is a driving force of eye balls responsible for movements.

7. Koorman

It is responsible for the opening and closing of the eyelids and also vision. It is responsible for yawning.

8. Kirukaran

It is responsible for the salivation of the tongue and also nasal secretion.
Responsible for cough and sneezing and induces hunger.

9. Devathathan

This aggravates the emotional disturbances like anger, lust, frustration etc. As emotional disturbances influence to a great extent the physiological activities, it is responsible for the emotional upsets.

10. Dhanancheyan

Expelled three days after the death by bursting out of the cranium. It is responsible for edema, plethora and abnormal swelling in the body in the pathological state.

9. AASAYAM – 5 (VISCERAL CAVITIES)

1. **Amarvasayam** (Reservoir Organ) - Stomach. It lodges the ingested food.
2. **Pakirvasayam** (Absorption Site)-Small intestine. The digestion and assimilation of food, absorption of saaram from the digested food are done by this Asayam.
3. **Malavasayam** (Excretory organ for solid waste) -Large Intestine, especially rectum, the place where the expulsion of undigested food parts and flatus takes place.
4. **Chalavasayam** (Excretory organ for liquid waste)- Urinary Bladder, kidney. Site of the formation and excretion of urine.
5. **Sukkilavasyam** (Genital organs.) –Site of production and development of spermatazoa and ovum.

10. KOSAM – 5 (*FIVE STATUS OF THE HUMAN BODY OR SHEATH*)

1. **Annamaya Kosam** -Gastro intestinal system
2. **Pranamaya Kosam** - Respiratory system
3. **Manomaya Kosam** - Mental System

4. **Vignanamaya Kosam** - Nervous system and higher intellect

5. **Aananthamaya Kosam** -Reproductive system

11. AATHARAM – 6 (*STATIONS OF SOUL*) “ஓம் ந ம சி வா ய”

1. Moolatharam

Situated at the base of spinal column between genital and anal orifice and beneath the perineum. Letter “ஓம்” is stationed here.

2. Swathitanam

Located 2 fingerwidths above the Moolaathaaram, (i.e.) midway between genital and navel region. Letter “ந” is inherently present here. Earth element is attributed to this region.

3. Manipooragam

Located 8 fingerwidths above the Swathitanam, (i.e.) at the naval center. Letter “ம” is inherently present here. Element is water.

4. Anakatham

Located 10 fingerwidths above Manipooragam, (i.e.) location of heart. Letter found is “சி”. Element is fire.

5. Visuthi

Located 10 fingerwidths above the Anakatham (i.e.) located in throat. Letter “வா” is inherently present. Element is Air.

6. Aakinai

Situated between the two eyebrows. Letter “ய” is inherently present here. Element is Space

12. MANDALAM – 3 (*REGIONS*)

1. Thee Mandalam (fire zone)

Fire Zone is found 2 finger widths above the Moolaathaaram

2. Gnayiru Mandalam (Solar zone)

Solar zone, located 4 finger widths above the umbilicus.

3. Thingal Mandalam (lunar zone)

Lunar zone is situated at the center of two eye brows

13. MALAM – 3 (*THREE IMPURITIES OF THE SOUL*)

1. Aanavam

This act clouds the clarity of thought, cognitive power of the soul, yielding to the egocentric consciousness like ‘I’ and ‘Mine’ claiming everything to be his own (Greediness).

2. Kanmam

Goes in collaboration with the other two responsible for incurring Paavam (the Sin) and Punniyam (Sanctity / virtuous deed).

3. Mayai

Serves as an obstacle due to the mentality of claiming ownership of the others property and thereby inviting troubles.

14. THODAM- 3 (*THREE HUMOURS*)

1. Vali (Vatham) - It is the creative force formed by combination of Vaayu and

Aakaya bootham

2. Azhal (Pitham) - It is the protective force. Formed by Thee bootham

3. Iyam (Kabam) -It is the destructive force. Formed by Mann and Neer

Bootham

15. EADANAI -3 (*PHYSICAL BINDINGS*)

1. Porul Patru - Materialistic affinity

2. Puthalvar Patru - Sibbling / Familial bonding

3. Ulaga Patru - Worldly affections

16. GUNAM – 3 (*THREE COSMIC QUALITIES*)

1. Sathuvam (Characters of Renunciations or Ascetic Virtues)

The grace, control of senses, wisdom, penance, generosity, Excellence, calmness, truthfulness is the 8 qualities attributed to their benevolent trait.

2. Raasatham (Royal character)

Enthusiasm, wisdom, valour, virtue, penance, offering gift, art of Learning, listening are the 8 traits

3. Thamasam (Carnal / Immoral Character)

Immorality, lust, anger, murderousness, violation of justice, gluttony, falsehood, forgetfulness, fraudulence, etc.

17. VINAI – 2 (ACT)

1. **Nalvinai** - Good Acts (Meritorious acts)
2. **Theevinai** - Bad Acts (Sinful acts)

18. RAGAM – 8 (THE EIGHT PASSIONS)

1. **Kaamam** - Lust
2. **Kurotham** - Grudge / Hatred
3. **Ulobam** - Stingy
4. **Moham** - Infatuation
5. **Matham** - Rut (The feeling of high ego towards oneself)
6. **Marcharyam** - Internal Conflict, Envy
7. **Idumbai** - Mockery
8. **Ahankaram** - High Ego

19. AVATHAI – 5 (FIVE STATES OF CONSCIOUSNESS)

1. **Ninaivu** - State of wakefulness with the 14 karuvikaranathigal in all vibrancy (5 Pulan, 5 Kanmaenthiriyam and 4 Karanam) and is able to experience the pleasures and pains

2.Kanavu– State of dreams. In this 10 karuvikaranathigal (5 Pulan, 5 Kanmaenthiriyam) except karanam all lies dormant in the neck.

3. Urakkam - State of Sleep after which one cannot recapitulate what is seen or heard. The respiration lies in the heart.

4. Perurakkam - State of Repose (Tranquil or Peaceful State). The Jeevaathma lies in the naabi, producing the respiration.

5. Uyirpadakkam – Oblivious of the surroundings. The Jeevaathma is deeply immersed in Moolaathaaram resulting in a state of unawareness.

3. A.3.THE UYIR THATHUKKAL

The physiological units of the Human body are,

- Vali (Vatham),
- Azhal (Pitham) and
- Iyyam (Kapham).

They are also formed by the combination of the five basic elements. Accordingly Vali is formed by the combination of Vali (Air) and Aagayam (Space). This is the Creative force. Azhal is formed by Thee (Fire). This is the Force of Preservation. Iyyam is formed by Mann (Earth) and Neer (Water). This is the Destructive Force. These three humors are in the ratio 4:2:1 in equilibrium which is a healthy normal Condition. They are called as the life forces or humours.

"பொங்கிய தைந்துக்குள் பொல்லாதது இம் முன்றுதான்
தங்கிய வாயு சமத்தன் மகாவாதம்
பங்கிய வன்னியால் பகுந்தது பித்தமே
பகுந்த சலத்தில் பரிசிக்கும் நல்லையும்
வகுந்த இம்முன்றால் வளர்ந்தது நோயெல்லாம்
அகுந்தது தானறிந்து அளவிட்ட யோகிகள்
மகிழ்ந்தே யிதில் நின்ற மயக்கம் அறிவாறே"

-பதினென் சித்தர் நாடி சாஸ்திரம்

THE FORMATION OF UYIR THATHUKKAL,

மூவகை நாடியும் உயிர் தாதுவும்

"தாது முறையே தனிஇடை வாதமாம்
போதுறு பின்கலை புகன்றது பித்தமாம்
மாது சுமுமுனை வழங்கிடும் ஐயமாம்
ஒது முறை பார்த்து உணர்ந்தவர் சித்தரே"

-பதினென் சித்தர் நாடி சாஸ்திரம்

மூவகை வாயுவும் உயிர் தாதுவும்

"உணர்ந்த அபானன் உறும் அந்த வாதத்தில்
புணர்ந்த பிராணன் புகும் அந்தப் பித்தத்தில்
அணைந்த சமானன் அடங்கும் கபத்தோடு
இணைந்திவை மூன்றுக்கு எடுத்த குறி ஒன்றே"

-பதினென் சித்தர் நாடி சாஸ்திரம்

The Vali naadi is formed by the combination of Abanan and Idagalai.

The Azhal naadi is formed by the combination of Piranan and Pinkalai.

The Iyya naadi is formed by the combination of Samanan and Suzhumunai.

I.Vali (Vatham)

Vali is soft, fine and the temperate (coolness and hotness) which could be felt by touch.

The sites of vali

According to **Vaithya Sathakam**, Vali dwells in the following places:

"நெளிந்திட்ட வாதமபானத்தைப் பற்றி

நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்று

குளிந்திட்ட மூடமதூ டெழுந்து காமக்

கோடியிடையைப் பற்றியெழுங் றொக்கை நாடி

நிணமான பொருத்திடமும் ரோமக் காலும்

நிறைவாகி மாங்கிசமெல் லாம்பரந்து"

-வைத்திய சதகம்

Umbilicus, Rectum, Faecal matter, Abdomen, Anal region, Bones,
Hip joints, Navel Plexus, Joints, Hair follicle and Muscles.

"அறிந்திடும் வாத மடங்கு மலத்தினில்"

-திருமூலர்

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்

நாபிக்குக் கீழென்று நவில லாகும்"

-யுகி

According to Sage Thirumoolar and Sage Yugi muni, the location of
Vatham is the anus and the sub navel region.

Properties of Vali

"ஒழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க

எழுச்சிபெற எப்பணியுமாற்ற எழுந்திரிய

வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு

வாகளிக்கும் மாந்தர்க்கு வாயு"

-சித்த மருத்துவாங்கச் சுருக்கம்

The following are the natural properties of Vali

- 1) To stimulate the respiration
- 2) To activate the body, mind and the intellect.
- 3) To activate the fourteen different types of natural reflexes or urges.

- 4) To activate the seven physical constituents in functional co-ordination.
- 5) To strengthen the five sense organs.

In the above process Vatham plays a vital role in assisting the body functions.

II. Azhal (Pitham)

The nature of Azhal is Atomic. It is sharp and hot. The ghee becomes watery, salt crystallises and jaggery melts because of heat. The heat of Azhal is responsible for many actions and their reactions.

The sites of Azhal

According to **Vaithiya Sathagam**, the Pingalai, Urinary bladder, Stomach and Heart are the places where Azhal is sustained. In addition to the above places, the umbilicus, epigastric region, stomach, sweat, saliva, blood, essence of food, eyes and skin are also the places where Azhal sustains. Yugi muni says that, the Azhal resides in urine and in the places below the neck region.

The character of Azhal

Azhal is responsible for the digestion, vision, maintenance of the body temperature, hunger, thirst, taste etc. Its other functions include thought, knowledge, strength and softness.

The functions of Azhal

- 1) Maintenance of body temperature
- 2) Produces reddish or yellowish colour of the body.
- 3) Produce heat energy on digestion of food.
- 4) Produces sweating
- 5) Induces giddiness.
- 6) Produces blood and the excess blood is let out.
- 7) Gives yellowish colouration to the skin, eyes, faeces and urine
- 8) Produce anger, heat, burning sensation, inaction and determination.
- 9) Gives bitter or sour taste.

Types of Azhal

1. Aakkanal – Anila Pitham or Prasaka pitham – The fire of digestion.

It lies between the stomach and the intestine and causes digestion and dries up the moist ingested substance.

2. Vanna eri – Ranjaga pitham – Blood promoting fire

This fire lies in the stomach and gives red colour to the chyle and produces blood. It improves blood.

3. Aatralanki – Saathaga pitham – The fire of achievement

It gives energy to do the work.

4. Ulloli thee – Prasaka pitham – The fire of brightness.

It gives colour, complexion and lusture to the skin.

5. Nokku Azhal – Alosaga pitham – The fire of vision.

It lies within the eyes and causes the faculty of vision. It helps to visualize things.

III. Iyyam (Kapam)

The nature of Iyyam

Greasy, cool, dull, viscous, soft and compact are the natures of Iyyam.

Sites of Iyyam

Head, tongue, eyes, nose, throat, thorax, bone, bone marrow, Joints, blood, fat, sperm and colon are the sites of Iyyam. It also lies in stomach, spleen, the pancreas, chyle and lymph.

The natural quality of Iyyam

Stability, greasiness, formation of joints, the ability to withstand hunger, thirst, sorrow and distress are the qualities. It also helps to withstand sufferings.

Functions of Iyyam

Greasiness, strength, roughness, knowledge, cool, growth, heaviness of bone, restriction of joint movements, pallor, indigestion, deep sleep and to have a sweet taste in tongue are the functions of Iyyam. The skin, eyes, faeces and urine are white in colour due to the influence of Iyyam.

Five types of Iyyam

1. Azhal Iyyam -Avalambagam

Heart is the seat of Avalambagam. It controls all other 4 Iyyams

2. Neerpi iyyam -Kilethagam

Its location is stomach. It gives moisture and softness to ingested food.

3. Suvai kaan iyyam – pothagam

Its location is tongue. It is responsible for the sense of taste.

4. Niraivur iyyam – Tharpagam

It gives coolness to the eyes.

5. Ondri iyyam – Santhigam

It gives lubrication to the bones particularly in the joints

3. A.4. THE UDAL THATHUKKAL

Udal Thathukkal are the basic physical constituents of the body. They are also constituted by the Five Elements.

SEVEN PHYSICAL CONSTITUENTS OF THE BODY

1. Saaram -This gives mental and physical perseverance.

2. Senneer -Imparts colour to the body and nourishes the body

- 3. Oon** -It gives shape to the body according to the physical activity and plasters the skeleton to give the body a plumpy appearance.
- 4. Kozhuppu** -It lubricates the joints and other parts of the body for smooth functioning.
- 5. Enbu** -Supports the frame and responsible for the postures and movements of the body.
- 6. Moolai** -It occupies the medulla of the bones and gives strength and softness to them.
- 7. Sukkilam** -It is responsible for reproduction.

3. A.5. UDAL THEE (Four kinds of body fire)

There are four kinds of body fire. They are Samaakkini, Vishamaakkini, Deeshaakkini and Manthaakkini.

1. Samaakkini

The digestive fire is called as Samaakkini. This is constituted by Samana Vayu, Anala Pitham and kilethaga Kapham. If they are in normal proportion, then it is called as Samaakkini. It is responsible for the normal digestion of the food

2. Vishamaakkini

Due to deranged and displaced Samana Vayu, it takes longer time for digestion of normal food. It is responsible for indigestion due to delay in digestive process.

3. Deeshaakkini

The Samana vayu blends up with the Azhal, which leads to increased Anala Pitham, so food is digested rapidly.

4. Manthaakkini

The Samana vayu conjugates with the Iyyam, which leads to increased Kilethaga Kapham. Therefore food is sluggishly digested for a very longer period leading to abdominal pain, distention, heaviness of the body etc.

3. A.6.THINAI

There are five thinai (the land)

1. Kurinchi - Mountain and associated areas
2. Mullai - Forest and associated areas
3. Marudham - Agricultural land and associated areas
4. Neidhal - The coastal and associated areas
5. Paalai - Desert and associated areas

3. A.7. KAALAM

Ancient Tamilians divided a year into six different seasons known as Perumpozhudhu and likewise the day into six segments which are known as Sirupozhudhu

Perumpozhudhu:

A year is divided into six seasons. They are as follows

- Kaarkalam – Monsoon season (August 16 – October 15)
- Koothirkalam – Postmonsoon season (October 16 – December 15)
- Munpanikalam- Early winter season (December 16 – February 15)
- Pin panikalam – Late winter season (February 16 – April 15)
- Illavenilkalam – Early summer season (April 16 – June 15)
- Mudhuvenilkalam – Late summer season (June 16 – August 15)

Sirupozhuthu

A day is divided into six yamams. They are,

1. Maalai (Evening),
2. Idaiyammam (Midnight),
3. Vaikarai (Dawn),
4. Kaalai (Morning),
5. Nannpakal (Noon),
6. Erpaddu (Afternoon).

Each perumpozhuthu and sirupozhuthu is associated with the three humors naturally.

3. A.8.FOURTEEN NATURAL REFLEXES/ URGES

The natural reflexes excretory, protective and preventive mechanisms are responsible for the urges and instincts. They are 14 in number,

1. Vatham (Flatus)
2. Thummal (Sneezing)
3. Siruneer (Micturition)
4. Malam (Defaecation)
5. Kottavi (Act of yawning)
6. Pasi (Sensation of hunger)
7. Neer vetkai (Sensation of thirst)
8. Erumal (Coughing)
9. Ellaipu (Fatigue)
10. Thookam (Sleep)

11. Vaanthi (Vomiting)
12. Kaneer (Tears)
13. Sukilam (Semen)
14. Suvasam (Breathing)

These natural reflexes are said to be an indication of normal functioning of our body. A proper maintenance should be carried out and they should not be restrained with force.

3.B.SIDDHA PATHOLOGY

3.B.1. KUGARANA NILAI IN SIDDHA MEDICINE

According to Siddha System, human body sustains the state of healthy living via keeping the Three Humours- Vatham, Pitham and Kabam in equilibrium, influenced by dietary habits, daily activities and the environment around. The three humours represent the five basic elements or Bhuthas. In case this equilibrium is disturbed, it leads to a condition known as disease. It is basically the derangement of five elements, which in turn alters the Three Humors. There can either be a decrease or increase in the balance.

3. B.2. DISEASE

Disease is also known by other names viz sickness, distemper, suffering and ailment, distress of mind, chronic disease and dreadful illness.

3.B.3. THE CHARACTERISTICS FEATURE OF DISEASE

Diseases are of two kinds:

- i. Pertaining to the body
- ii. Pertaining to the mind according to the variation of the three humors.

1. Causes of Disease

Excepting the disease caused by our previous births, the disease is normally caused by the disparities in our food habits and actions. This has been rightly quoted in the following verses by Sage Thiruvalluvar,

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா வெண்ணிய மூன்று"

-திருவள்ளுவர்

The food and actions of a person should be in harmony with the nature of his body. Any increase or decrease in a humor viz. Vatham, Pitham, Kabam leads to the derangement of the three humors. The acceptance of food means the taste and quality of the food eaten and a person's ability to digest. 'Action'

mean his good words, deeds or bad actions. According to Thiruvalluvar, the disease is caused due to the increase or decrease of three humors causing the upset of equilibrium.

So disease is a condition in which there is derangement in the five elements, which alters the three humors, reflected in turn in the seven physical constituents. The change could be an increase or decrease in the humours. This shows the following signs as per vitiation of the individual humour.

நோய் பிறக்கும் வகை

"பிணியினுற் பத்தியைப் பேசுவேன் பிணிமுதல்
வாதபித் தங்கப் மன்மந்திரி தந்திரி
வீதமா யுடலரண் மெய்ப்புர வரசுசெய்
முறைசெயு மாதலான் முதற்புர மென்றுட
கறைகுவ ராரிய ரதன்பரி வாரமா
நோய்க்கண மிகுதியி னணுகுநுட் பமதாய்ப்
பேய்க்கண மாமவை பெரும்பசி தாகுமூர்
வழிநடை வெயின்மழை மலிதணீர் நனைவுடன்
மந்தமாங் காரமாய் வார்த்தையா டுத(ற்)றுயில்
வந்தவை விலக்குதன் மாதரைக் கூடுதல்'
வெந்தறு கட்கதம் வீரமாய்ச் சுமத்தலும்
மலசல பந்தனை வருமித னனமிகப்
பெலமுறு நோய்களும் பிறப்பதும் நிச்சயம்."

- தேரையர் காப்பியம்

As per Theraiyar, the cause of disease is vitiated Vatha, Pitha and Kaba, increased appetite, increased thirst, excessive hot, anger, constipation, dysuria polluted water.

2. QUANTITATIVE CHANGES OF UYIR THATHUKKAL

HUMOUR	INCREASED	DECREASED
VALI (Vatham)	Wasting, blackish discoloration, affinity to hot foods, tremors, distended abdomen, constipation, weakness, insomnia, weakness in sense organs, giddiness and laziness.	Body pain, feeble voice, and diminished capability of the brain, decreased intellectual quotient, syncope and increased kaba condition.
AZHAL (Pitham)	Yellowish discoloration of conjunctiva, skin, urine and faeces, polyphagia, polydypsia, dyspepsia, burning sensation all over the body and decreased sleep.	Loss of appetite, cold, pallor and features of increased kabam.
IYYAM (Kabham)	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough and excessive sleep.	Giddiness, dryness of the joints and prominence of bones. Profuse sweating in the hair follicles and palpitation.

3. UDAL THATHUKAL

These are the changes produced when Udal thathukkal are affected.

UDAL KATTUKKAL	INCREASED FEATURES	DECREASED FEATURES
1.SARAM	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough & excessive sleep.	Dryness of skin, tiredness, loss of weight, lassitude and irritability while hearing louder sounds.
2.SENNEER	Boils in different parts of the body, spleenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy and jaundice.	Affinity to sour and cold food, nervous, debility, dryness and pallor.
3.OON	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh and genitalia.	Lethargic sense organs, pain in the joints, muscle wasting in mandibular region, gluteal region, penis and thighs.
4.KOZHUPPU	Identical feature of increased flesh, tiredness, dyspnoea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen and thighs.	Loins pain, spleenomegaly and emaciation.

5.ENBU	Excessive ossification and dentition.	Joint pain, falling of teeth, falling and splitting of hairs and nails.
6.MOOLAI	Heaviness of the body and eyes, swollen interphalangeal joints, oliguria and non-healing ulcers.	Osteoporosis & Blurred vision.
7.SUKKILAM (OR) SURONITHAM	Increased sexual activity, urinary calculi.	Dribbling of sukkilam/ suronitham or senner during coitus, pricking pain in the testis & inflamed and contused external genitalia.

4.KAALAM

Change in Elementary conditions of the external world has its corresponding change in the human organs. They are as follows:

KALAM	KUTTRAM	STATE OF KUTTRAM
1. Karkaalam (Rainy season) (Aavani – Puratasi) (Aug 16 – Oct 15)	Vatham ↑↑ Pitham ↑ Kabam (--)	Ectopic escalation Insitu escalation Restitution
2. Koothir Kaalam (Postrainy season) (Iypasi – Karthigai) (Oct 16 – Dec 15)	Vatham (--) Pitham ↑↑ Kabam (--)	Restitution Ectopic escalation Restitution
3. MunpaniKaalam (Winter season) (Markazhi – Thai) (Dec 16 – Feb 15)	Vatham (--) Pitham (--) Kabam (--)	Restitution Restitution Restitution
4. Pinpani Kaalam (Post winter) (Masi – Panguni) (Feb 16 –Apr 15)	Vatham (--) Pitham (--) Kabam ↑	Restitution Restitution Insitu escalation
5. Elavenir Kaalam (Summer) (Chithirai–Vaikasi) (Apr 16 – Jun 15)	Vatham (--) Pitham (--) Kabam ↑↑	Restitution Restitution Ectopic escalation
6. MudhuvenirKaalam (Post summer) (Aani – Aadi) (Jun 16 – Aug 15)	Vatham ↑ Kabam (--)	Insitu escalation Restitution

5.THINAI

S. NO	THINAI	LAND	HUMORS
1.	Kurinchi	Mountain and its surroundings Hilly terrain	Kabam
2.	Mullai	Forest and its surroundings Forest ranges	Pitham
3.	Marutham	Farm land and its surroundings Cultivable lands	All three humors are in equilibrium
4.	Neithal	Sea shore and its adjoining areas, Coastal belt	Vatham
5.	Palai	Desert and its surroundings Arid zone	All three humors are affected.

6. Alteration in Reflexes (14 VEGANGAL)

There are 14 natural reflexes involved in the physiology of normal human beings. If willfully restrained or suppressed, the following are resulted.

1. Vatham (Flatus)

This urge should not be suppressed. If it is suppressed it leads to chest pain, epigastric pain. Abdominal pain, ache, constipation, dysuria and indigestion predominate.

2. Thummal (Sneezing)

If restrained, it leads to headache, facial pain, low back pain and neuritic pain in the sense organs.

3. Siruneer (Urine)

If restrained, it leads to urinary retention, urethral ulcer, joint pain, pain in the penis, gas formation in abdomen.

4. Malam (Faeces)

If restrained, it leads to pain in the knee joints, headache, general weakness, flatulence and other diseases may also originate.

5. Kottavi (Yawning)

If restrained, it leads to indigestion, leucorrhoea, and abdominal disorders.

6. Pasi (Hunger)

If restrained, it leads to the tiredness of all organs, emaciation, syncope, apathetic face and joint pain.

7. Neer vetkai (Thirst)

If restrained, it leads to the affection of all organs and pain may supervene.

8. Kaasam (Cough)

If it is restrained, severe cough, bad breath and heart diseases will be resulted.

9. Ilaippu (Exhaustiveness)

If restrained, it will lead to fainting, urinary disorders and rigor.

10. Nithirai (Sleep)

All organs will get rest only during sleep. So it should not be avoided. If disturbed it will lead to headache, pain in the eyes, deafness and slurred speech.

11. Vaanthi (Vomiting)

If restrained, it leads to itching and symptoms of increased Pitham.

12. Kanneer (Tears)

If it is restrained, it will lead to Sinusitis, headache, eye diseases and Chest pain.

13. Sukkilam (Semen)

If it is restrained, there will be joint pain, difficulty in urination, fever and chest pain.

14. Swaasam (Breathing)

If it is restrained, there will be cough, abdominal discomfort and Anorexia.

3. C.DIAGNOSTIC METHODOLOGY

The Diagnostic methodology in Siddha system is unique as it is made purely on the basis of clinical acumen of the physician. The diagnosis is arrived from,

- Poriyal arithal and Pulanal arithal (examination of sense organs)
- Vinaathal (Interrogation)
- Envagai thervu (Eight fold examination)
- Manikkadai nool (Wrist circumference sign)
- Sothidam (Astrology)
- Assessment of deranged three Dosham (humours), Udal thathukal and 96 principles.

PORIYAL ARIDHAL

The physician should examine the patient's porigal by his porigal.

- | | | |
|----------|---|--------------------------------|
| 1. Mei | - | To feel all types of sensation |
| 2. Vaai | - | For knowing taste |
| 3. Kan | - | For vision |
| 4. Mooku | - | For knowing the smell |
| 5. Sevi | - | For hearing |

PULANAL ARITHAL

The physician should examine the patient's pulangal by his porigal & Pulangal

- | | | |
|--------------|---|--------|
| 1. Hearing | - | Ear |
| 2. Vision | - | Eye |
| 3. Taste | - | Tongue |
| 4. Sensation | - | Skin |
| 5. Smell | - | Nose |

VINAADHAL (INTERROGATION)

The physician should interrogate the patient's name, age, occupation, native place, Socio – economic status, dietary habits, present complaints, history of present illness, aggravating factors, history of previous illness.

ENVAGAI THERVUGAL

“அகத்துறு நோயை கரத்தாம லகம்போல்
பகுத்தறிவீர் நாடிப் பரிசம் - தொகுத்த நிறம்
கட்டுவகைச் சொல்மொழிகண் கண்ட மல மூத்திரம் நா
எட்டுவகை யாலு மறிவீர்”

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

According to Agathiyar Vaithiya Sinthaamani Venba – 4000, the Envagaithervu Includes Naadi (Pulse) Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

"நாடி பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரம் மருத்துவராயுதம்"

-தேரையர்.

"மெய்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி"

-தேரையர்.

As per Saint Therayar, the eight methods of diagnosis are Naadi (Pulse) Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

பதினெண் சித்தர் நாடி சாத்திரம்

"பாரீர்நாடி யறிந்து உணர்ந்து பரமன் செயலும் பிணிமுறையும்
நீரேயோடு மலசலமும் நிறமுங் குணமு முகக்குறியும்
சாரே யிணங்குங்குழல் மடவீர்காலன் றேகம் வயதிளமை
தேரேயறியுமுகநாடி நெறிங்குறியுஞ் செறியுஞ் சொல்வோமே"

-பதினெண் சித்தர் நாடி சாத்திரம்

As per Sage Agathiyar, Naadi (pulse), Malam (stools), Salam (urine), Niram (complexion), Gunam (character), MugaKuri (facies), Thegam (constitution), Vayadhu (age), Elamai are the diagnostic tools.

"தொகுக்கலுற்ற அட்டவிதப் பரீட்சை தன்னை
துலக்கமுரும் பண்டிதரே தெளிவதாகப்
பகுக்கரிய நாடியை நீ பிடித்துப் பாரு
பகர்கின்ர வார்தையைப்பார் நாவைப்பாரு
வகுக்கரிய தேகமதைத் தொட்டுப்பாரு
வளமான சரீரத்தின் நிறத்தைப் பாரு
சகிக்கரிய மலத்தைப்பார் சலத்தைப் பாரு
சார்ந்தவிழி தனைப்பார்த்துத் தெளிவாய்க் கானே"
-கண்ணுசாமிப்பரம்பரை வைத்தியம்

According to literature KannuSaami Paramparai Vaithiyam, Naadi, Naa, Thegam, Thodu unarvu, Niram, Malam, Salam and Vizhi are the diagnostic tools.

அகத்தியர் வைத்திய ரத்தின சுருக்கம்

"நாடியால் முன்னோர் சொன்ன நற்குறிகுணங்களாகும்
நீடிய விழியினாலும் நின்ற நாட்குறிப்பினாலும்
வாடிய மேனியாலும் மலமோடு நீரினாலுஞ்
சூடிய வியாதி தன்னைச் சும் பெற வறிந்து சொல்லே"

According to Agathiyar Vaithiya Rathina Surukkam, the diagnostic tools are Naadi (Pulse), Vizhi (Eyes), Kurigunam (Signs), Nalkurippu (Chronology), Maeni (Constitution), Malam (Stools) And Neer (Urine).

பரிபூரண நாடி

"அட்டமாங்கிரிகடன்னை யறிந்து நீயுணரவேண்டில்
வட்டமாமுகங்கள்பல்லும் வாயதில்நாக்குங்காயங்
கட்டருமலங்கள் கைதனில்நாடிதானுந்
திட்டமாயறிந்துசெய்யுந் திறமுள்ளவயித்தியராமே"

According to the Paripoorana Naadi, the diagnostic parameters are Mugam (Facies), Pal (Teeth), Vai (Mouth), Naakku (Tongue), Kaayam, Irumalam, Naadi (Pulse).

தன்வந்திரி பகவான்

"திருமறை முனிவன் கூறும் வாகடச் செய்கைதன்னில்
வருபல வியாதியான வகையறி குவதே தென்னில்
உருவுறு நாடி யாலு மொண்முக மலநீ ராலும்
தெரிவிழி நாவினாலுந் தந்தலக் கணத்தி னாலும்"

-தன்வந்திரி (ப.சி.நாடி சாத்திரம்)

According to Dhanvantri Vaithiyam, the diagnostic parameters are Naadi (Pulse), Mugam (Facies), Malam (Stools), Neer (Urine), Udal (Constitution), Vizhi (Eyes), Naa (Tongue), Pal (Teeth).

பதினெண் சித்தர் நாடி சாத்திரம்

"திரணியதோர் நாடிகண்கள் சத்தத்தோடு
தேகத்தின் துபரிசம் வானம் நாக்கு
இரணமலம் இவைகளெட்டும் இதம்படவே
தான்பார்த்துக் குறிப்புங் கண்டு
பரனருளாற் பெரியோர்கட்பாதம் போற்றிப்
பண்புதவறாமற் பண்டிதணஞ் செய்வீரே"

-பதினெண் சித்தர் நாடி சாத்திரம்

According to the above literature, the diagnostic tools are Naadi (Pulse), Kan (Eyes), Sattham (Voice), Thegam (Constitution), Sparisam and Naa (Tongue).

1.TONGUE EXAMINATION (நாத்தேர்வு)

"முள்ளாய் வெடித்து கருத்தான் முன்பின் வெளுத்து
தள்ளாநீ ருண்டோ சேர்ந்தால் பசந்தால் - எல்லாம்
நடுவாம் பலபலவாம் நற்சன்னி முன்னோய்
ஓடுநீரில் நாவினநோது."

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, fissured and black tongue represent vitiated Vatha humor, pallor represents Kabam , green colour represents Pitha humor and mixed appearance of these features resembles Sanni noi.

“பலமான ருசியறியும் நாவின் கூற்றைப்
பகர்கின்றேன் வாதரோகி யின்றன் நாவு
கலமாக வெடித்து கறுத்திருக்கு முட்போல்
கண்டு கொள்வாய் பித்தரோகியின்றன் நாவு
நலமுற சிவந்து பச்சென்றிருக்கும் நட்பிலா
சிலேத்துமரோகி யின்றன் நாவு
தலமதனிலுற்றமுதி யோர்கள் சொன்ன
தன்மையடி தடித்து வெளுத்திருக்கும்பாரே”

-கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali derangement, tongue will be cold, rough, furrowed and tastes pungent. In Azhal, it will be red or yellow and kaippu taste will be sensed. In Iyyam, it is pale, sticky and sweet taste will be lingering. In depletion of Thontham, tongue will be dark with raised papillae and dryness.

Examination of tongue also includes the salivary examination. The following stanza describes salivary examination

“எச்சிற் பரிவாயிளநீர்பால் வெண்ணெயனை
யெச்சிற் பரிவா யிலகுநுரை - யெச்சிற்
களியடைமா நன்றுமுதற் நண்ணான்கு முன்னிக்
களியடைமா மேவுபிட கா.”

-சிகிச்சாரத்ன தீபம்

2. EXAMINATION OF COMPLEXION (உடல் நிறத் தேர்வு)

“உரைத்தகற்ப் பான்வாத ரோகிபித்த ரோகி
அரைத்தமஞ்ச ளைக்குளித்தோன் ஆவான் - இரத்தம்
குளித்தவனு மாவான் கொடும்சிலேத்தும ரோகி
வெளுத்திடுவான் தொந்தரோகியெ..”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"மூன்றாகும் வாதபித்த சிலேத்து மத்தால்
 மிகுந்தமுறத் தொந்தித்த ரோகி தேகம்
 தோன்றாத சீதய வுஷ்ணங் காலமூன்றுந்
 தொகுத்தேன்யான் திரேகத்தி னிறத்தைக் கேளு
 ஊன்றாத வாதவுடல் கறுத்துக் காணும்
 ஊரியபித்த முடல் சிவப்புப் பசுமைகாணும்
 போன்றாத வையவுடல் வெண்மை தோன்றும்
 பொருந்துந்தொந்த ரோகவுடற் கிவற்றை யொக்கும்"
 -கண்ணுசாமி பரம்பரை வைத்தியம்

"பனைவாத தேகநிறங் கறுத்து நிற்கும்
 பைத்தியதேக நிறமஞ்சள் சிவப்பதாமே
 தாமே சிலேட்டு மதேகநிறம் வெளுப்பு தான்
 தொந்தேகம் இந்நால் விதமாயநிற்கும்"
 -தன்வந்திரி (பதினெண் சித்தர் நாடி சாத்திரம்)

In Vali, Azhal and Iyyam vitiations, the colour of the body will be dark, yellow or red and fair respectively.

3. VOICE EXAMINATION (ஒலித் தேர்வு)

"பலரோகி வார்த்தைப் பலவிதமாம் வாதத்
 தலைரோகி வார்த்தைச் சமமாகும் - நிலைகடந்த
 பித்தரோ கிக்குஉயர்ந்த பேச்சுண்டாம் ச்லேட்டுமந்தான்
 சத்தம்ஈ னச்சுரமாம் தான்."

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"பார்ப்பதான் வாதரோகி யின்றன் வார்த்தை
 பக்குவமாய்ச் சமசத்த மாயிருக்கும்
 சேர்ப்பதுதான் பித்தரோகியின்றன் வார்த்தை
 செப்பக்கோள பெலத்துமே யுறத்திருக்கும்
 ஏற்பதுதான் ஐயரோகி யின்றன் வார்த்தை
 யெளிதாகச் சிறுத்திருக்குமியல்பிதாகும்

கேசற்கவே யிம்முன்றுந் தொந்தமாகில்

கூசாமற் பலவிதமாய் பேசுவாரே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

"மாமயிலே சத்தமது அறிய வேண்டில்

வாதரோகிசம தொனியாய் வார்த்தை பேசும்

ஈமமுள்ள பித்தந்தான் இறைந்த கூறும்

இயம்பிடும் சிலேத்தும ரோகிக்கீனசத்தம்

நாமுரைத்தோம் தொந்த ரோகிக்குத் தானிந்த

நால்விதமாய் மொழிந்த சத்தம் நயந்து காணே"

-பதினெண் சித்தர் நாடி சாத்திரம்

In vitiation of Vali, Azhal and Iyyam, the voice would be normal, high pitched and shrill or low pitched respectively. By the voice, the strength of the body can be assessed.

4. THE EYE EXAMINATION (கண் தேர்வு)

"கண்கறுத்து நீரோடில் காலாம் நடுவாகில்

கண்பசக்கும் சொக்கும் கடையாகில் - கண்பீளை

சாடி வெளுக்குமே சன்னிவாதம் பித்தமுமென்

றோடியகா மாலை பசக்கும்"

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, in vitiated Vali eyes turn black and tears shed. In vitiated Azhal humour , mukkutram and in jaundice yellowish discoloration occurs. In vitiated Iyyam, the eyes turn white.

" உண்மையாய் கண்கள்குறிப் பதைக்கேள் வாதம்

உற்றவிழி கறுத்துநொந்து நீருங் காணும்

தண்மையிலாப் பித்தரோகி யின்றன் கண்கள்

சார்பாகப் பசுமைசிவப் பேறுங் காணும்

வண்மையிலா வையரோகி விழிகள் தானும்

வளமான வெண்மைநிற மேதா நாதம்

திண்மையிலாத் தொந்தரோகி யின்றன் கண்கள்

தீட்டுவாய் பலநிறமென் றறைய லாமே"

-கண்ணுசாமி பரம்பரை வைத்தியம்

"காணுகின்ற வாத ரோகிக்கு கண்கள்

கருநிறமாய் நொந்துமிகத் தண்ணீர்பாயும்

பூணுகின்ற பித்தரோகிகடி மஞ்சள் போலிருக்கம்

சிவப்பு நிறப்பொலிவு தோன்றும்"

-பதினெண் சித்தர் நாடி சாத்திரம்

In Vali disease, the tears is darkened, in Azhal disease they are yellow, in Iyya disease they are whitish in colour and in Thontha disease the tears are multi coloured. In Vali disease there will be excessive tears (epiphora). In disturbance of all the three humuors, eyes would be inflamed and reddish.

5. FAECES EXAMINATION (மல தேர்வு)

"கறுத்தமல பந்தமலங் காலாகும் பித்தம்

சிறுத்தமுட் டிணம்செம்மை சேரும் - பொறுத்தொருக்கால்

சீதமலந் தில்லையுமாம் சேர்ந்தபல ரோகியாம்

மீதமலம் எண்ணிறமுமே."

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, in vitiated Vali, the stool is hard and black. In vitiated Azhal, it is hot and red. In vitiated Iyyam it is cool and watery.

"ஒக்குமே வாத நோய் மலத்தைப் பார்க்கில்

உகந்தமலம் கறுகியே கறுத்திருக்கும்

மிக்கபித்த நோய்மலத்தை யுற்றுப் பார்க்கில்

மிகுந்தசிவப்புடன் பசுமை தானுந் தோற்றும்

மைக்குவளை மனேகே ளைய ரோகம்

மலமதுதான் வெண்மைனிற மாயிருக்கும்

பக்குவமா யிம்முன்றுந் தொந்திப் பாகில்

பகருமின் நிறங்கள்வகை பரிந்து காணும்"

-கண்ணுசாமி பரம்பரை வைத்தியம்.

In excacerbated Vali, faeces is hard, dry and black in colour. In Azhal vitiation, it is yellow. In Iyyam, disturbance it is pale.

6. URINE EXAMINATION (நீர் தேர்வு)

“வாதரோ கம்தெளிந்தான் மஞ்சளித்தான் மற்றையது

சீதனுரைத் தார்பலவாம் சேளர்ந்தநோய் - கோதகலா

முத்திரத்தின் உண்மை மொழிந்தோம் இனிச் சொல்வாம்

நாத்திரத்தின் உள்ளவகை நாம்.”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணந்தா நுரைக்கிற

பூங்கொடி கறுத்துநொந்து சிறுத்துடன் பொருமி வீழும்

பாங்குடன் பித்தத்தோர்க்கும் பசியநீர் சிவந்து காட்டி

ஏங்கவே கறுக்கதாக எரித்துடன் கடுத்து வீழும்

வீழுமே சிலேற்பனத்தோர் நீர்க்குணம் விளம்பக் கேளாய்

நாளுமே வெளத்துறைந்து நலம்பெற வீழுங் கண்டாய்

வாள்விழி மானேதொந்த ரோகமா னிடர்க்குத் தானே

தாளுநீர் பலநிறந்தா னெனவே சாற்றி னோமே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

‘Neer’ refers to Urine ‘Kuri’ refers to Sign. Theraiyar, one of the renowned authors of Siddha medicine described urine examination and stages of health. He had explained about the colour and consistency of the urine in vitiated humor and disease. He also emphasized the spreading nature of a single drop of oil on the surface of the urine indicating the imbalance of specific dosha and prognosis of disease. Normal urine is straw coloured and odourless. The time of the day and food taken will have an impact on the colour of the urine.

COLOUR OF URINE

- Yellow colour – similar to straw soaked water – indigestion
- Lemon colour – good digestion
- Reddish yellow – heat in body
- Colour similar to flame of forest red or flame coloured excessive heat
- Colour of saffron – extreme heat

“மாணிக்கம் பால்பிரச மஞ்ச ளிஃதுயிர
மாணிக்கம் பால்வரிசை மாறாநீர் - மாணிக்க
முத்தம் மாதிரி யொருநாலு மந்தமுனே
யுத்தம் மாதிரி யுன்.”

- சிகிச்சாரத்ந தீபம்

As per Sikicharathna Theepam,

COLOUR OF URINE - PROGNOSIS

- | | | |
|---------------------------|---|-------------------------|
| • Ruby red or milky white | - | Poor |
| • Honey | - | Slow and take long time |
| • Golden yellow | - | Good |

NEIKKURI (நெய்க்குறி)

“ அருந்து மாறிரதமும் அவிரோதமதாய்
அஃகல் அலர்தல் அகாலவூன்தவிர்ந்தழற்
குற்றள வருந்தி உறங்கி வைகறை
ஆடிகலசத் தாவியே காதுபெய்
தொரு முகூர்த்தகலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

“ அரவென நீண்டினஃகே வாதம்
ஆழிபோல் பரவின் அஃதே பித்தம்
முத்தொத்து நிற்கின் மொழிவதன் கபமே”

-அகத்தியர் வைத்திய ரத்தின சுருக்கம்

The spreading pattern of oil drop is the indicative of Vali, Azhal and Iyyam diseases e.g

1. Aravu (Snake Pattern of spread) indicates Vali disease
2. Mothiram (Ring Pattern of spread) indicates Azhal disease
3. Muthu (Pearl Pattern of spread) indicates Iyya disease

In Neikkuri, the rapid spread of oil drop; Pearl beaded and Sieve type of spreading pattern indicates incurable state of the disease. From this, we can assess the prognosis by the Neikkuri.

"இலகுமா மூத்தி ரத்தி லெண்ணெயை விட்டுப் பார்க்கில்
கலக்கஞ் செய் வாதத் தோர்க்குக் காணவே நீள மாய்ப்போம்
பிலனுறு மெய்யை வாட்டும் பித்தமே சிதறிக் காட்டும்.

சாற்றிய கபந் தனக்குச் சல்லடைக் கண்போல் காணும்
தேற்றிய திரிதோ டந்தான் சொல்முன்று குணமுங் காட்டும்
வேற்றொரு துளியாய் நின்றால் வெகுதாம் சாத்தியந்தான்
ஆற்றிமெள் ளப்ப டர்ந்தா வதுசுக சாத்ய மாமே

ரினி லமுந்திப் போனால் நிகழ்ந்திடு மசாத்தியந்தான்
வாரிடு முளையாய் கேளாய் வளைய பாத்திரத்தி லேனும்
பாரினில் குயவன் செய்மண் பாத்திரந் தனிலா னாலும்
சாரவே பிடித்து வெய்யிற் றனில்வைத்துப் பார்ப்பாய்தானே."

- தேரையர் விருத்தம் - சிகிச்சாரத்ந தீபம்

SPREADING PATTERN OF OIL - INTERVENTION

Lengthening	-	Vali
Splits	-	Azhal
Sieve	-	Iyyam
Stands as a drop	-	Poor prognosis
Slowly spreads	-	Good prognosis
Drop immerses into the urine	-	Incurable disease

7. TOUCH (தொடு உணர்வு)

"வெம்மை குறைந்தாலு மிகுந்தாலும் வாதபித்தம்
தம்மை நிரைநிரையாய்ச் சாற்றுவார்- வெம்மையன்றி
சீதமும்அவ் வாறாகில் சிலேட்டும் மொன்றுதொந்த
மீதமும்அவ் வாறாகு மேல்."

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

“நேயமுடனே வாதத்தின் தேசந்தானும்
நேர்மையாய்க் குளிர்ந்து சில விடத்திலே தான்
மாயமுட னுட்டணமுந் துடிதுடிப்பு
மருவுதலாம் பித்தத்தின் தேகந் தானும்

தோயவே வுட்ணமதா யிருக்குந் தெளிவாய்
சேத்துமத்தின் தேகமது குளிர்ந்திருக்கும்
பாய தொந்த தேகமது பலவாறாகும்
பரிந்து தொட்டுத் தேகத்தைப் பார்த்துப் பேசே"

-கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali disease, some regions of the body felt chill and in some areas they are hot. In Azhal disease, we can feel heat. In Iyya disease, chillness can be felt. In Thontham diseases, we can feel altered sensations.

8. NAADI (நாடி)

The ‘Pulse Diagnosis’ is a unique method in Siddha Medicine. The pulse should be examined in the Right hand for male and the left hand for female. The pulse can be recorded at the radial artery. By keenly observing the pulsation, the diagnosis of disease as well as its prognosis can be assessed clearly.

Naadi is nothing but the manifestation of the vital energy that sustains the life within our body. Naadi plays an most important role in Envagai thervu and it has been considered as foremost thing in assessing the prognosis and diagnosis of various diseases. Any variation that occurs in the three humors is reflected in the Naadi. These three humors organize, regularize and integrate

basic functions of the human body. So, Naadi serves as a good indicator of all ailments.

நாடி பார்க்கும் வகை

"இடுமென்ற நாடிகள்பார்க்கும் வகையைக் கேளு
என்னவென்றால் நடுவிரல் நீவிப்பின்னே
அடுமென்ற அடுத்தவிரல் மோதிரமாம் விரலை
அப்பனே இளுத்தபின்பு சுண்டுவிரலிளுத்து
உடுமென்ற தூண்டுவிர லிளுத்து அப்பால்
உத்ததொரு அங்குட்ட விரலைநீ விக்கரத்தில்

படுமென்ற சீயோதி அங்குலமோ தள்ளி
பார்தடவி மூன்றுதரம் சுரம்பார்க்கும் வகையே
வகை என்ன வாதமது ஒண்ணைரையாம் பித்தம்
வளமையொன்று அய்யங்கால் வளமாய்நிற்கில்
பகையில்லை நாடிகளுந் தொந்த மில்லை
பண்பான் சுகரொசருருபக் கூறுசொன்னேன்"
-அகத்தியர் கனகமணி100

Naadi is felt by,

Vali	-	Tip of index finger
Azhal	-	Tip of middle finger
Iyyam	-	Tip of ring finger

மூவகையும் மாத்திரை அளவும்

"வழங்கிய வாதம் மாத்திரை ஒன்றாகில்
வழங்கிய பித்தம் தன்னில் அரைவாசி
அழங்கும் கபந்தான் அடங்கியே காலோடில்
பிழங்கிய சீவற்குப் பிசுகொன்று மில்லையே"

-நோய் நாடல் முதல் பாகம்

The pulse is measured in wheat/grain expansive heights. The normal unit of pulse diagnosis is 1 for Vali (Vatham), ½ for Azhal (Pitham) and ¼ for Iyyam (Kapham).

THE PULSE PLAY

Compared to the gait of various animals, reptiles and birds,

“வாகிலன்னங் கோழி மயிலென நடக்கும் வாதம்
ஏகிய வாமையட்டை யிவையென நடக்கும் பித்தம்
போகிய தவளை பாம்பு போலவாம் சேத்துமந்தான்”

--நோய் நாடல் முதல் பாகம்

Vali - Movement of Swan and Peacock
Azhal - Movement of Tortoise and Leech
Iyyam - Movement of Frog and Serpent.

“பார்க்கையில் கைவிகாரம் பார்த்தா லாடவர்க்கு
எற்கும் வலக்கை இடக்கை - மடவார்க் காசு”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

Naadi is examined in right side for men and on the left side for women.

9. MANIKADAI NOOL (Wrist circumetric sign)

Agathiya soodamanikayaru ..

“கமலக்கை மணிக்கையில் கயறு சூத்திரம்
விமலனே நோக்கியே வேடமாமுனி
திமிலாம் பிணியது சேரச் செப்பியே
அமலனாமுனிக்கு முன்னருளிச் செய்ததே”

-பதினெண் சித்தர் நாடிநூல்

According to the Pathinen Siddhar Naadinool, Manikadainool is also helpful in diagnosis. This manikkadai nool is a parameter to diagnose the disease by measuring the circumference of the wrist by means of a thread and then dividing the measured circumference with the patient's fingers. By this measurement the disease can be diagnosed.

When the Manikkadai nool is 11 fbs, the person will be stout and he will live a healthy life for many years. When the Manikkadai nool measures between 4 to 6, it indicates poor prognosis of disease and the severity of the illness will be high and it leads to death.

MANIKKADAI -INFERENCE NOOL

10 fbs	-	Pricking pain in chest and limbs, gastritis and ulcer result.
9 ¾ fb	-	Fissure, dryness and cough will be resulted.
9 ½ fbs	-	Odema, increased body heat, burning sensation of eye, fever, Mega noi and anorexia.
9 ¼ fbs	-	Dysuria, insomnia ,sinusitis and burning sensation of eye.\
9 fbs	-	Impaired hearing, pain around waist, thigh pain, unable to walk.
8 ¾ fbs	-	Increased body heat, skin disease due to toxins, abdominal discomfort, cataract, sinusitis.
8 ½ fbs	-	Leucorrhoea, venereal disorder and Infertility will occur..
8 ¼ fbs	-	Stout and painful body. Headache. Sinusitis and toxins induced cough.
8 fbs	-	Abdominal discomfort, gastritis, anorexia and venereal diseases.
7 ¾ fbs	-	Piles, burning sensation of limbs, headache, numbness occur. Within 2 years cervical adenitis and epistaxis results.
7 ½ fbs	-	Osteoporosis, abdominal discomfort, burning sensation of eyes, increased body temperature. Within 6 days all the joints of the limbs presents a swelling.
7 ¼ fbs	-	Lumbar pain, increased pitha in head, anemia, eye pain, odema and somnolence

7 fbs	-	Pitham ascends to head, haemetemesis, phlegm, burning sensation of limbs and constipation.
6 ¾ fbs	-	Eye ache, dizziness, testis disorder. Within 3 years it causes anuria, pain and burning sensation over limbs, facial sweating results.
6 ½ fbs	-	Thirst, anorexia, increased body heat and vatham results.
6 ¼ fbs	-	Diarrhea, belching, vomiting and mucous dysentery
6 fbs	-	Reduced weight, phlegm in chest. It results in death within 20 days.
5 ¾ fbs	-	Delirium, dizziness, loss of consciousness . It results in death even if the patient takes gruel diet
5 ½ fbs	-	Severity of illness is increased. Toxins spread to the head. Tooth darkens. Patient will die in 10 days.
5 ¼ fbs	-	Patient seems to be sleepy and death results on the next day.
5 fbs	-	Pallor and dryness of the body. Kabam engorges the throat and the person will die.
4 ¾ fbs	-	Dryness of tongue and tremor present. Patient will die in 7 days.
4 ½ fbs	-	Shrunk eyes, odema will present and death results in 9 days.
4 ¼ fbs	-	Tremor, weakness of limbs and darkening of face occurs. Finally death results in two days.
4 fbs	-	Pedal odema will be present. Patient will die in 5 days.

10. THE ASTROLOGY

Macrocosm and Microcosm

Man is said to be Microcosm, and the Universe is Macrocosm; since what exist in the Universe exists in the human body too. Man is being an integral part of universal nature. The forces prevailing in the microcosm (Human body) are analogous with that of the forces prevailing in the macrocosm (Universe). The natural forces acting in and through various organs of the body are intimately related to or similar to or correspond to the forces acting in and through the organisms of the world.

This closely follows the Siddhar's doctrine,

"அண்டத்திலுள்ளதே பிண்டம்
பிண்டத்திலுள்ளதே அண்டம்
அண்டமும் பிண்டமு மொன்றே
அறிந்து தான் பார்க்கும் போதே"

- சட்டமுனி

Astral influences:

All the influences which are radiated from the sun, planets and that of the stars can act upon the human bodies. Moon exercises a very bad impact on the disease in general especially during the period of new moon. For instance, paralysis, brain affections, dropsy, and stimulation of sexual perversions are resulted during the newmoon. Mars causes anemia and lack of nervous vigour. A conjugation of the moon with other planets such as Venus, mars, etc may make its influence still more injurious.

The 8th place forms the laghanam which deals about ones age, chronic diseases, death etc. In the organisms of man, these forces may act in an abnormal manner and cause disease. Similarly, in the great organism of the cosmos, they act abnormally likewise and bring about disease on earth and its atmospheric condition like earthquake, storms etc. The Mars invisibly influences human's blood constituents. The Venus instigates intersexual love.

The following are the instances in which every sign of the zodiac acts towards some particular parts of the body.

1. According to T.V.S. Dictionary:

- | | |
|------------|---|
| 1. Aries | - Neck |
| 2. Taurus | - Neck and shoulder |
| 3. Gemini | - Arms and hands |
| 4. Cancer | - Chest and adjacent parts. |
| 5. Leo | - The heart and stomach |
| 6. Virgo | - The intestines, base of stomach and umbilicus |
| 7. Libra | - Kidney |
| 8. Scorpio | - Genitals |

- 9. Sagittarius - Lips
- 10. Capricorns - Knees
- 11. Aquarius - Legs
- 12. Pisces - Feet

2. According to literature Thiruvalluvar periya sunthara sekaram.

- 1. Mesham - Head
- 2. Rishabam - Face
- 3. Mithunam - Neck
- 4. Kadagam - Shoulders
- 5. Simmam - Chest
- 6. Kanni - Side of body
- 7. Thulaam - Back, stomach
- 8. Virutchigam - Testicles
- 9. Thanusu - Thigh
- 10. Magaram - Knees
- 11. Kumbam - Heel
- 12. Meenam - Foot

11. The Impact of the Planets on the Human Organs

According to the literature Siddha Maruthuvanga Surukkam

Each of these planets hold jurisdiction over some parts of the body similar to the signs of the Zodiac. The planets exercise special power over some parts of the body resulting in a disease or diseases in accordance with their impacts on the three basic humors in the system.

1. Sani (Saturn)

It exhibits supremacy over the bones, tooth, cartilages, ear, spleen, bladder and brain and gives rise to fever, leprosy, paralysis, dropsy, cancer, cough, asthma, deafness of the right ear, hernia etc.

2. Guru (Jupiter)

It holds jurisdiction over the blood, liver, pulmonary veins, diaphragm, Muscles of the trunk and sense of touch & smell.

3. Sevvaai (Mars)

It has got power over the bile, gall bladder, left ear, pudendum, kidneys, fever, jaundice, convulsions, hemorrhage, carbuncle, erysipelas, ulcer etc.

4. Sukkiran (Venus)

It exercises its impact on the blood and semen, throat, breast, abdomen, uterus, genitalia, taste, smell, pleasurable sensation, gonorrhea, barrenness, Abscesses or even death from sexual passions or from poison.

5. Pudhan (Mercury)

It holds jurisdiction over the animal, spirit, also over legs, feet, hands, fingers, tongue, nerves and ligaments and produces fevers mania, phrenitis, epilepsy, convulsion, profuse expectoration or even death by poison, witchcraft and so on.

Planets	Organs of impact
1. Solar force	Heart
2. Lunar force	Brain
3. Mars	Gall Bladder
4. Mercury	Kidney
5. Venus	Lungs
6. Jupiter	Liver
7. Saturn	Spleen

5. According to literature Thiruvalluvar Periya Sunthara Sekaram.

- | | | | |
|----|-----------|---|---------------------------|
| 1. | Sooriyan | - | Head |
| 2. | Santhiran | - | Face |
| 3. | Sevvai | - | Chest |
| 4. | Puthan | - | Center of Posterior Trunk |
| 5. | Guru | - | Stomach |
| 6. | Sukkiran | - | Groin, Genitalia |
| 7. | Sani | - | Thigh |
| 8. | Raagu | - | Hands |
| 9. | Kedhu | - | Legs |

Each of these rasis and the organs of impact as well as the Girahams are found to be related with the resultant diseases of corresponding organs. Therefore, the human body is impregnated with the vital forces that could be acted upon by the astronomical bodies in the sky. With the augmented spiritual force, a sage is able to get control over the above said planets. All the others are under the influence of the forces exhibited by these asteroids.

4. UTHIRAVATHA SURONITHAM

4.A.INTRODUCTION TO VATHAM

According to T.V Sambasivam pillai, the Vali is defined as the one of the three humors (life forces), occupying the region below navel. It is responsible for all movements of the body. It spreads throughout the body and causes respiration, hunger, thirst etc. It is the energy or power that prevails all over the body keeping various tissues in good condition. Vali is soft, fine and temperate (coolness) which could be felt by touch..It is the base for the genesis of other two humors.

4.A.1.THE SITES OF VALI

நெளிந்திட்ட வாதமபா னத்தைப் பற்றி
நிறைந்திடையெச் சேர்ந்துந்திக் கீழே நின்று
குளிந்திட்ட மூலமதூ டெழுந்து காமக்
கோடியிடையைப் பற்றியெழுங் குணத்தைப் பாரே"
"குணமான வெலும்பைமேற் றொக்கை சாடி
நிறைவாகி மாங்கிசமெல் லாம்பரந்து
கால்காட்டி வாதமெங்குங் கலக்குந் தானே"!

-வைத்திய சதகம்

According to Vaidya sathakam, Vali dwells in the following places :
Umbilicus, rectum (abanan), abdomen, anus, bones, hip-joint, skin, navel plexes,
joints, hair follicles and muscles.

"அறிந்திடும் வாத மடங்கு மலத்தினில்"

-திருமூலர்

"நாமென்ற வாதத்து கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவில வாகும்".

According to Sage Tirumoolar and Yugi muni,the places of Vali are anal
region and the region below the navel.

"அறிந்திடும் எல்லாம் ஒன்றாய் ஆவிக்கும் அதிர்வானந்த
செறிந்திடும் வன்னிதானும் மூடிடும் கண்ணிலே தான்
பறிந்திடும் வாய்வு தானும் பரிசிக்கும் எங்கும் பாரே"

-அகத்தியர் வைத்திய காவியம்

According to Agasthiyar Vaithiya Kaviyam, the Vali exists all over the body.

"அபானமுத லுந்திவரை வாதநிலை
உந்தியின் மேல் மார்பு மட்டும் பித்தநிலை".

-அனுபோக வைத்திய பிரம்ம ரகசியம்

According to Anupoga Vaithiya Brama Ragasiyam, the Vali exists between the Umbilicus and navel region.

4.A.2.CHARACTERS OF VALI

S.NO	OWN CHARACTER	OPPOSITE CHARACTER
1.	Kadinam – Rough	Miruthu –Soft
2.	Varatchi - Dry	Pasumai-Uncious
3.	Elasu - Light	Baluvu-Heavy
4.	Kulirchi - Cold	Akini-Hot
5.	Asidha – Unstable	Sthiram-Stable
6.	Anuththuvam-Stable	Katti-Solid

4.A.3.PROPERTIES OF VALI

"ஒழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க
எழுச்சுபெற எப்பணியுமாற்ற-எழுந்திரிய
வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு
வாக்களிக்கும் மாந்தர்க்கு வாயு"

-மருத்துவ தனிப்பாடல்

The following are the inherent properties of Vali.

- To stimulate
- To respire.
- To activate the Body ,mind and the intellect.
- To operate the fourteen different kinds of natural reflexes / urges.
- To activate the seven physical constituents in junctional co-ordination.
- To strengthen the five sense organs.

In the above processes Vatham plays a vital role to assist the body functions.

Functions of deranged Vatham (Vali) (Abnormal functions of Vatham)

- Body pain,
- Pricking pain,
- Pain as though the body is tightly bounded by cords,
- Nervous debility,
- Tremor,
- Rigidity,
- Dryness,
- Remorseness,
- Debility (Emaciation),
- Throbbing pain (Restriction of movements),
- Trauma,
- Dislocation of joint,
- Weakness of functional organs and loss of functions,
- Loss of taste sensation or perception of Astringent taste only,
- Constipation, concentrated urine,
- Thirst,
- Sensation of fragility in the foreleg and thigh,
- Numbness and pricking pain in the bones,
- Goose skin,
- Stiffness of upper and lower limbs and black,
- The skin, eyes, faeces and the urine are dark in colour.

4.A.4.CAUSES FOR VATHA DISEASES:

"என்னவே வாதந்தா னெண்ப தாகும்
மிகுத்திலே மனிதர்களுக் கெய்து மாறு
பின்னவே பொந்தனையே சோரஞ் செய்து
பெரியேர்கள் பிராமணரைத் தூஷ் ணித்தும்
வன்னவே வச்சொத்திற் சோரஞ் செய்து
மாதாபிதா குருவை மறந்து பேர்க்கும்
கன்னவே வேதத்தை நிந்தைசெய்த பேர்க்குங்
காயத்திற் கலந்திடுமே வாதந் தானே.
"தானென்ற கசப்போடு துவர்ப்பு ரைப்பு
சாதகமாய் மிஞ்சுகினுஞ் சமைத்த வன்னம்
ஆனென்ற வாறினது பொசித்த லாலும்
ஆகாத் தேறலது குடித்த லாலும்
பானென்ற பகலுறக்க மிராவி ழிப்பு
பட்டினியே மிகவறுதல் பார மெய்தல்
தேனென்ற மொழியாற் மேற் சிந்தை யாகில்
சீக்கிரமாய் வாதமது செனிக்குந் தானே."
"ஆணான வரன்றனையே மதியா மாந்தர்
அகதிபர தேசியர்கட் கன்ன மீயார்
கோனான குரமொழியை மறந்த பேர்கள்
கொலைகளொவு பொய்காமங் குறித்த பேர்க்கு
ஊனான சடந்தன்னில் வாதம் வந்து
உற்பவிக்கும் வேதத்தி லுண்மை தானே."

-யுகி வைத்திய சிந்தாமணி

According to Yugi Vaithya Sinthamani, those who are squandering money, insulting elders, abandoning or forgetting the parents, blaspheming the Holy books, not respecting the divine gifts, having wickedness in their mind and those with day slumber and staying back at night will attract Vali diseases.

Increased intake of bitter taste, astringent, hot taste, increased intake of water, excessive starvation, sexual indulgence will produce Vali diseases.

தொழில் பொறுகைப்புக்கார்த் தல்துவர்த்தல் விஞ்சுகினுஞ்சோறும்
 பழையதாம் வரகு மற்றைப் பைந்தினை யருந்தி னாலும்
 எழில்பெறப் பகலு றங்கி இரவினி லுறங்கா தாலும்
 மழைநிகர் குழலி னாளே வாதங்கோ பிக்குங் கானே.
 காணவே மிகவுண் டாலுங் கருதுபட் டினிவிட்டா
 மானனை யார்கண் மோக மறக்கினு மிகுந்திட்டாலும்
 ஆணவ மலங்கடம்மை யங்ஙனே விடாத தாலும்
 வானுதன் மடநல் லாளே வாதங்கோ பிக்குங் கானே.
 பாரினிற் பயப்பட்டாலும் பலருடன் கோபித் தாலும்
 காரெனக் கருகி யோடிக் கழுமரத் துரத்தி னாலும்
 ஏர்பெறு தனது நெங்சின் மிகத்துக்க மடைந்திட்டாலும்
 பாரியகாற்றி னாளும் படரினும் வாதங் காணும்.
 காலங்கண் மாறி யுண்ணுங் காரியத் தாலுந் தண்ணீர்
 சாலவே யருந்தி ணலுஞ் சந்தியி லுட்கார்ந் தாலும்
 கோலமாம் புளிப்பு நெய்மைக் குறைவற வருந்தி னாலும்
 வாலவார் முலைநல் லாளேவாதமுற் பவிக்குங் கானே.
 உற்பவித் தெழுமப் போதே யுயர்புறத் துடியைப் பற்றித்
 தெற்பறக் குடைந்து நோவுஞ் செய்துமேல நோக்கு மாகில்
 விற்பொலி நுதலி னாளே மேலிடுங் குணங்க டம்மில்
 சொற்பெறு வாதம் தோன்றுமென் றறிந்து கொள்க
 தெரிந்துமுன் சொன்ன வண்ணஞ் செய்யகா லடியைப் பற்றி
 மாந்தனைப் போற்றி மிர்த்து மற்றுமேல் நோக்கு மாகில்
 அரன்றனைத் துதியா மாந்த ரனுசரிக் கின்ற கோயில்
 சரிந்திடுங் குழலாய் வாதங் குடிபுகுஞ் சாற்றுங் காலே.

- பரராசசேகரம்

Pararasa sekaram also states the same that is also stated in Yugi Vaithya
 Sinthamani like increased intake of varagu, thinai, ghee and kaippu taste, increased
 intake of food, increased fear, excessive anger, deep sadness, increased exposure to
 forcible flow of air, altered dietary timings etc.

"கானடையாலச் சத்தாற் கடும்பசி யாற்கோ பத்தால்
ஊனமி லிரவில் வார்த்தை யுரம்பெற விரைக்க லாலுண்
ஆனபின் முனிவால் மாரு தடுத்தடுத் துரைக்குஞ் சொல்லால்
ஈனமி லிகழ்ச்சி யான விகல்வாத கோபங் காணும்."

-அங்காதிபாதம்

According to Angaathipatham, increased starvation and increased anger will produce Vali disease.

"வெய்யில் நடக்கை யாலும் மிகத் தண்ணீர் குடிக்கை யாலும்
செய்யிழை மகளி னாளைச் சேர்ந்தனு பவிக்கை யாலும்
பையவே உண்கை யாலும் பாகற்காய் தின்கை யாலும்
தையவே வாத ரோகஞ் சனிக்குமென றறிந்து கொள்ளே."

-தேரையர் வாகடம்

According to theraiyar vagadam, walking under hot sun, increased sexual desire, increased intake of food and bitter gourds will produce Vali disease.

4.A.5.வாதநோய்கான இயல்பு:(Characteristic features of Vatha)

"வாதமே கதித்த போது வாயுவுமெழும்புங் கண்டீர்
வாதமே கதித்த போது வாயுவந்திடுஞ் சன்னி தோஷம்
வாதமே கதித்த போது வல்லடுன் மெலிந்து கொல்லும்"

-அகத்தியர் சிகிச்சா ரத்னதீபம்

According to Agathiyar Sikicha Rathna Deepam derangement in Vali will produce delirium and emaciation.

"வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்கு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்
ஓதரிய வாதமனலாகு நடுக்கமுண்டாம் பொருள்களயர்ந்த
தீதெனவே நரம்பித்து சந்துகள் தோறுங்கடக்குந் தினமுந்தானே"

-தேரையர் வாகடம்

According to Theraiyar Vagadam, deranged Vali produces loss of appetite, fever, cough, insomnia, shivering of the body, nervine disorders, pain in all the joints.

வாதக்கூறு விருத்தம்:

"சொல்லவே வாதமது மீற்றானால்
சோர்வடைந்து வாய்வினால் தேகமெங்கும்
மெல்லவே கைகால் எசதியுண்டாகும்
மெய்மடங்கும் நிமிர்வொண்ணாதிமிருண்டாகும்
வெல்லவே பொருமும் வயிறுளைக்கும்
விரும்பியன்னஞ் சொல்லாது விந்து நஷ்டம்
கொல்லவே நாப்புளிக்கும் கழிச்சலுண்டாம்
கூறினார் மலையமுனி கூறினாரே
வாதமீறினால் வாயுவினால் தேகமெல்லாங்
குத்துங் கால்கை சந்து பொருத்துக்கள் உளையும்
கால்கையொரு பக்கத்தில் முடங்கும் குனிந்தால்
நிமிர்வொட்டாது திமிருண்டாகும் உடல் பொருமும்
குடல்புரட்டும் அன்னஞ் சுருக்கும்,வயிறு மந்திக்கும்
பொருமும், மலசலங்கட்டும் அபானஞ் சுருங்கும்
நாவு புளிக்குந் தாது நட்டமாகுங் கழிச்சலுண்டாகும் "

According to Vatha Kooru Virutham, deranged Vali produces fatigue, lethargy, loss of appetite, abdominal discomfort, diarrhoea, constipation, cough, insomnia and joint pain.

ரோகிகளின் தேகமுதலான குறிகள்:

"அறைந்தோம் வாதரோகியுடல் அலர்கண்முகமும் பல்மலமும்
நிறைந்த விழியில் நீர்வடியும் நீண்ட நாயு கறுத்திடயு
திறைந்த முள்ளாய் தானிருக்கும் சிறுநீர் பொருமிகறுத்துவரு
முறைந்த நீருங் கறுகறுத்து முறையாய் ரோக முண்டாமே"

Physical nature of Vatha constitution is dark coloured face, eye, teeth and stool.

4.A.6.நோய் வரும் வழி (AETIOLOGY)

கால இயல்பு – Environmental Factors:

"வாதவர்த் தன காலமேதோ வென்னில்
மருவுகின்ற ஆனி கற்கட மாதம்
ஆதனைப் பசியோடு கார்த்திகை தன்னில்
ஆடருமே மற்ற மாதங்கள் தன்னில்
போகவே சிமிக்கின்ற காலமாகும்"

-யூகி சிந்தாமணி

Vali diseases will be precipitated in the months from Aani to
karthigai (June to December)

"பதுமத்தைப் பூக்க வைக்கும் பானுமிகக் காயும்
முதுவேனி விற்பு விறநீர் முற்றும் -கதுமென
வற்றும் கபமிகும் வாயுமிகும் வாழ்மாந்தக்
குற்ற நலிக் கேதிதென் றோது"

-சித்த மருத்துவாங்க சுருக்கம்

In Muthuvenil kaalam(Late summer), the increased solar radiation increases the evaporation of water content in the world, at the same time these similar actions on the body produces increased production of mucous for digestion and develop the derangement of Vali disease.

உணவுவகைகள் (Diet)

"வளி தரு காய்கிழங்கு வரைவிலா தமில்ல கோழை
புளி தயிர் போன்மிகுக்கு முறையிலா வுண்டி கோடல்
குளிர்ந்தரு வளியிற் றேகங் குனிப்புற வுலவல் பெண்டிர்
குளிதரு முயக்கம் பெற்றோர் கடிசெயல் கருவியாமல்."

-சபாபதி கையேடு

According to Sababathi Kaiyedu, increased intake of tubers, increased exposure to wind, living in higher altitudes, increased sexual desire, and increased exposure to chill weather will aggravate Vali diseases.

"தொழில் பெறு கைப்புக்கார்த்தல் துவர்த்தல் விஞ்சுகினுஞ்சோறும்
பழையதாம் வரகு மற்றைப் பைந்தினையருந்தினாலும்
எழில் பெறப் பகலுறங்கி இரவினிலுறங்காதாலும்
மழை நிகா குழலினாலே வாதங்கோ பிக்குங்காணே."

-பரராச சேகரம்

According to Pararasa Sekeram, increased intake of bitter taste, astringents, sour tastes, increased intake of old cooked rice, day slumber and staying back at night will increase Vali.

பழக்க வழக்கங்கள் (Habits)

"வெய்யிலில் நடைக்கையாலும் மிகத்தண்ணீர் குடிக்கையாலும்
செய்யிழை மகளினரைச் சேர்ந்தனுப விக்கையாலும்
பையனே உண்மையாலும் பாகற்காய் தின்கையாலும்
தையலே வாதரோகம் சனிக்குமென் றறிந்து கொள்ளே".

-தேரையர் வாகடம்

Excessive walking in hot sun, excessive intake of water bitter guard increased sexual desire, may play a role in disturbing the normal functions of Vali.

4.A.7.FUNCTIONS OF DERANGED VALI:

(Altered functions of Vali)

"வாதமே கதித்த போது வாயுவு மெழும்பி மீளும்
வாதமே யிரும லாகித் தொடர்ந்திடுஞ் சன்னி வாதம்
பேதமே செய்கி ராணி பெறுவயி றுதா தோஷம்
போதவே தோன்று மென்று பொருந்தவே முனிவர் சொன்னார்.
வாதமே முதலா நாடி வாதமே தூல காயம்
வாதமே பெலவா னாகும் யழலை வேண்டும்
வாதமே மந்தம் பற்றும் வாதமே சீத காலம்
வாதமே யுடற்கு ளிர்ச்சி வாதமே மூலமாமே.
வாதமே வாயு வாகும் வாதமே காலிற் சேரும்
வாதமே நன்னி யோடு மருவிடில் வலியு முண்டாம்

வாதமே விடியப் பத்து வாதமே சாயங் காலம்
வாதமே புளிப்பு வாங்கும் வாதமுந் தளர்ச்சி காலம்."

-பரராச சேகரம்

According to Pararasa sekaram the deranged Vali will produce cough, delirium, diarrhoea and abdominal distension.

"வாத வீறு அன்ன மிறங்காது கடுப்புண்டாகும் வண்ணமுண்டாம்
மோது கட்டு ரோகம் சுரமுண்டாம் மிருமலுமா முறங்காதென்றும்"

-தேரையர் வாகடம்

According to the Sage Theraiyar, the deranged Vali produces reduced appetite, fever, cough and insomnia.

"செய்யவே வாதத்தால் வருநோய் சொல்வேன்
சிக்கிமல சலங்கடுத்த லுளைதல் குத்தல்
நையவே கண்கறுத்துக் கண்ணீர் வீழ்ந்து
நாச்சிதறி வெடித்து வாய் திக்கி பேசல்
மெய்தடித்து மிகநோதல் பொருமல் கொள்ளல்
விந்துவலி தான் குறைந்து மந்தமாதல்
பையவே குளிர்ந்திருத லான வெல்லாம்
பலவாகக் கண்டறிந்து சிந்திப்பாயே."

- அங்காதிபாதம்

"பாங்கான வாதந்தான் மீறுமாகிற்
பருவயிறு சுவாசமுடன் குத்துக்கோழை
நீங்காத பிடிப்புளைவு வாயு தொந்தம்
நீர்வெடித்துப் பாய்தல் மந்தம் விடமிப்பாதல்
தூங்குசன்னி வாதசுர மதனிற் தோடம்
தொகுத்த கிரா ணிக்கழிச்ச லுதர தோடம்
வாங்குபல வலிகுளிர்ச்சி குன்மவாத
மலசலங்கட் டிடல்வாத வந்திப்பாமே."

-அங்காதிபாதம்

According to Angaathipatham the deranged Vali produces constipation, scanty micturition, increased lacrimation, with darkening of eyes, fissures in tongue, dysarthria, flatulence, abdominal distension, and cough with expectoration, indigestion and diarrhoea.

"காணப்பா வாதமீறில் கால்கைகள் பொருந்து நோவும்
பூணப்பா குடல்புரட்டும் மலசலம் பொருமிக் கட்டும்
ஊணப்பா குளிருங் காய்ச்சல் உடம்பெல்லாம் குத்துவாய்வு
வீணப்பா குதமிறுக்கும் வியர்வையும் வேர்க்கும் தானே."

- அகத்தியர் வைத்திய காவியம் 1500

According to Agathiyar vaithiya kaaviyam, the deranged Vali produces pain in the joints of the hands and legs, flatulence, constipation, scanty micturition, fever with rigor, generalized body pain and increased sweating.

"தக்க வாயு கோபித்ததால் சந்துவுளைந்து தலைநோவா
மிக்க மூரி கொட்டாவி விட்டங் கெரியு மலங்கட்டும்
ஒக்க நரம்பு தான்முடங்கு முலர்ந்து வாய்நீ ருறிவரும்
மிக்க குளிரும் நடுக்கமுமாம் மேனி குன்றி வருங்கானே."

-தேரையர் வாகடம்

According to Theraiyar vagadam, the deranged Vatham produces pain in the joints, headache, constipation, increased salivation, chills with rigor, loss of normal complexion.

ஆகங்கறுக்குநோ யாகந் துடிக்கும்
ஆறாத்தீ யென்னமெய் யேகங் கொதிக்கும்
ஆருமெய் வியர்தியிர் வீமந்தம் வாய்மூச்சு
ஆகுமேயிது வாதமேலினி

-தேரையர் கரிசல்

According to Theraiyar karisal, the deranged vatham produces blackish discolouration of body, feverishness, increased sweating, indigestion and dyspnoea.

"மேவியவாதஞ் செய்யுங் குணந்தணை வியம்பக் கேளாய்
தாவியே வயிறு தந்தஞ் சந்துகள் பொருத்து நோவாஞ்
சீவிய தாதுநாசஞ் செறுத்துடன் சிறுநீர் வீழுங்
காவியங் கண்ணி னாளே மலமது கருகிவீழும்."

-அகத்தியர் வாத காவியம் 1000

According to Agathiyar vatha kaaviyam and kannusamiyam the deranged Vatham produces abdominal discomfort, pain in joints, oliguria, dysuria, constipation and flatulence.

4.A.8.KINDS OF VATHAM-10

"முறைமையாம் பிராணனோ டபானன் வியானன்
மூர்க்கமா முதானனொடு சமான னாகன்
திறமையாய் கூர்மனோடு கிருக ரன்றான்
தேவதத்த னொடுதனஞ் சயனு மாகும்"

- யூகி வைத்திய சிந்தாமணி 800

Eventhough the vatham is a single functional unit, it has got ten different forms and actions.

10 DIFFERENT KINDS OF VATHAM

- Praanan(Respiratory functions)
- Abaanan(Excretory functions)
- Viyaanan(Perfusion of oxygen & nutrients)
- Samaanan(Homeostatic functions)
- Udhaanan(Reverse peristalsis)
- Naagan(Higher intellectual function)
- Koorman(Constrictory functions)
- Kirukaran(Secretory functions)
- Devathathan(Mental &physical sluggishness)
- Dhananjeyan(Bloater of the body)

4.A.9.CLASSIFICATION OF VATHAM IN CLASSICAL LITERATURE:

S.NO	NAMES OF THE BOOKS	TYPES OF VATHAM
1.	Yugi vaithiya sinthamani	80
2	Astanga sangiragam	85
3	Noi Naadal Noi Mudal Naadal vol - 2	81
4	Theraiyar Vaagadam	81
5	Dhanvantri vaithiyam	81
6	Jeevarakshamirtham	80
7	Agathiyar - 2000	80
8	Bohar vaithiyam	84
9	Agathiyar kurunaadi	84
10	Agathiyar rathna churukkam - 500	84
11	Pararasa sekaram	80
12	Aviyalikkum amutha murai churukkam various parts of the body.	Diseases according to

4.B.UTHIRAVATHA SURONITHAM

4.B.1.Definition (Iyal):

Uthiravatha Suronitham is a type of arthritis characterised by pain, swelling, pricking sensation stiffness of the joints and restriction of movements due to deranged vatham.

Uthiravatha Suronitham = Uthiravatham + Suronitham

Uthiravatham = Arthritis of rheumatic origin marked by severe pain and the formation of inflammatory nodules in the region of joints especially in the limbs of the body.

Suronitham = Blood or menstrual blood or semen like fluid.

4.B.2.CLINICAL FEATURES OF UTHIRAVATHA SURONITHAM:

வைகிதமாய்க் கணைக்காலு முழங்கால் தானும்
மற்கடக் சந்து புறவடியும் வீங்கிச்
செய்கித மாற் சிறுவிரல்கள் மிகவும் நொந்து
சிந்தை தடுமாறியே சலிப்புண்டாகும்
பைகிதமாம் பயித்தியத் தில்லாத மிஞ்சிப்
பாரமாய் உற்பவித்து அழலுண்டாகும்ன்
உய்கிதமாம் அசனமது தானும் வேண்டா
உதிர வாத சுரோரிணிதத்தி னுணர்ச்சியாமே

-யூகி வைத்திய சிந்தாமணி.

4.B.3. BREAK OF SYMPTOMATOLOGY:

கணைக்கால் - கால் பரடு:

The joint between the tibia and fibula above on sides,

The part of the leg just above the ankle joint

முழங்கால் - Knee joint

புறவடி - Back of the leg

சிறுவிரல்கள் - Digits

நொந்து - Pain

வீங்கி -Swelling

சிந்தை -மனம் : Mind

சலிப்பு -சோர்வு, வெறுப்பு: Weariness

அசனம் -உண்ணல், உணவு: Eating, Food

பயித்தியம் -மதிக்கேடு: Madness, Folly

மற்கடம் - Hand like that of monkey

4.B.4.CLINICAL FEATURES:

- Pain in the knee joint, ankle joint and small joint of the body
- swelling in the knee joint, ankle joint and small joint of the body
- Apathetic mood
- Mental instability
- Loss of appetite.

4.B.5.THE CLINICAL FEATURES OF UTHIRAVATHA SURONITHAM IN 'PARA RASA SEKARAM':

பக்கமும் மார்பும் கூடப்பற்றியே இழுத்துக் கொண்டு
நெக்கியே மார்பிளைத்து தோதாய் நரம்பிழுத்து
ஒக்கவே சயித்தியங்கள் உயர்ந்துடன் மேலும் காலம்
மிக்குமே உதிரவாதம் என்றிது விளம்பலாமே

It is characterised by pain and tenderness of the axilla, breathlessness, pain in the upper limbs and lower limbs.

5. NEERKKURI NEIKKURI

5.A.நீர்க்குறி

கடவுள் வணக்கம்

ஒரு திருப்பிரணவத் துதித்தகாரிய
ஓத்தின் முன் மொழிக்குரையுரைத்தவாரியனை
கருணையினு தவியகவுரி தன்பாக
கருதரும் பெரும் பெயர் கடவுடனாக
நிறப்பது மச்சரணைஞ்சிலிருத்
நிறக்குறியியலினை நிலவப்புகல்வொம்.

-தேரையர் தைல வர்க்க சுருக்கம்

Lord Vinayaga who developed from the Pranava manthiram 'Ohm', Lord Muruga, Lord Shiva and Parvathy should be meditated before determining the Neerkkuri and Neikkuri, which was emphasized by Sage Theraiyar in his book of Theraiyar Thylavarka surukkam.

நீர்க்குறி

தர்க்கசாத் திரிக ளானோர் தங்களிற் றேர்ந்து நோயின்
வர்க்கமா நாடி தன்னா லறிவது மயக்க மென்றே
உற்றநீர்ப் பரீட்சை யாய்ந்தே யுணர்த்தின ரிதற்கு நேராய்
மற்றொரு விதிநூலில்லை மருத்துவக் கலைவல் லோர்க்கே.

-அங்காதி பாதம்

In order to shed off the ambiguity in the diagnosis of disease through pulse perception, the exponents have charted out a method called Neerkkuri - an incomparable method of diagnosis.

5.A.1. நிறக்குறி நெய்க்குறி நிச்சத்தற்குரிய நீர் இலக்கணம்:

“அருந்துமாறிரதமும் அவிரோதமதாய்
அஃகல் அலர்தல் அகாலவூன் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்

தொருமுகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

On the day before the urine test one should take food, consisting of all the six tastes in an harmonious blend at the regular time based on one's digestive fire (Appetite), after a sound overnight sleep, Urine should be collected in a crystal bowl and the test should be done before 90 minutes from dawn.

5.A.2.நீரின் பொதுக்குணம்-General features of urine:

"வந்த நீர்க்கரி எடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவவை யறைகுது முறையே"

The following are the features of urine,

1. Colour (நிறம்)
2. Density (எடை)
3. Froth (நுரை)
4. Odour (மணம்)
5. Deposits (எஞ்சல்)

5.A.3. நிறத் தொகை-different colour of urine:

"பீதம் செம்மைபைங் கருமை வெண்மையென்
றோதைங்கொழுமையை யொத்துகு நீரே "

The urine may be of the colours,

1. Yellow
2. Red
3. Green
4. Black
5. White

5.A.4. SUBDIVISIONS IN EACH COLOURS:

“அரிசனத்தாறும் அருணத்து நான்கும்
அரிதத்தைந்தும் அஞ்சனத்தொரு நான்கும்
வெண்மையுள் இரண்டுமாய் விள்ளுஞ் சுருதியே “

According to the above verse there are six types in yellow, four in red, five in green, four in black and two in white coloured based on different disease conditions.

5.A.5. YELLOWISH CHANGES IN URINE:

1. Urine indicating states of improper digestion:

"நீரணும் வழுதுகு நீத்தம் நிறமெனின்
சீரணக்குறைவின் அபக்குவ நீரே."

Urine taking the colour of water in which straw is drenched.

2. Urine indicating the ongoing digestion

"பாரில் துரிஞ்சிப் பழநிறம் பொருந்தில்
சீரணப்பக்குவ நீரெனத் தேரே."

Here the colour of the urine is that of the Thurungi Pazham-Giant lime fruit (citrus medica).

3. Urine which shows excessive heat present in the body:

"செம்மையும் நிசியும் சேர்ந்தெழு நிறமெனின்
வெம்மையுயர் விளைந்தவிர் நீரே."

Yellowish red urine is suggestive of excessive body temperature.

4. The colour of the urine in hot nature:

"காட்டின் நரந்தக்கனி நிறம் காணில்
சூட்டைத்தரற்குத் தொடுகுறி நீரே."

If the colour of urine is similar to the wild orange, it indicates the rise in temperature.

5. The colour of the very hot urine:

"கொதியனல் நிறத்தின் கொள்கையெய்யாயின்
அதுவுட்டிணத்தை யடைந்த நீரே."

The flame coloured urine denotes high temperature.

6. Very hotter than previously mentioned:

"மீதமுங் குங்குமப் பூவுமாரெழி றரின்
ஏதிதன் மேல் வெப்பின்றேனு நீரே."

Saffron coloured urine denotes very high temperature in the body.

5.A.6. REDDISH CHANGES IN URINE:

"அரத்தமும் கருமையும் அண்ணிய கறைதரின்
இரத்தம்பொங்கலால் இறங்கிய நீரே."
"செக்கச் சிவந்த பன்னீர்ப்பூப் பகருறின்
மிக்குதிரக் கொதிப்பாலுரு நீரே."
"கருமையுள் செம்மைசேர் கறையுஞ் சிவப்பும்
குருதிபொங்கிய குறிபுகல் நீரே."

Dark red colour of urine as that of rose flower may be observed in case of heated haematological systems and black and red colours admixed and frank red colours shows even more heated haematological systems.

5.A.7. REENISH CHANGES IN URINE:

1. சீதள நீர் நிறம்:

"கருமைச் சாமளக் கருவுறுமாயின்
வரசீதளத்தால் வரப்படு நீரே."

Black coloured urine with slight greenish tinge in it.

2. விழுத்தாலுண்டாகும் சீதள நீர் நிறம்:

"இடத்துறு குணத்தை ஏய்க்கு மெனிலோ
விடத்துறுசீதளம் மேலிடு நீரே."

Urine of sky colour indicates toxic state of the body along with coldness.

3.மிகு சீதள நீர் நிறம்:

"தகுமொரு நீலச்சாயை காண்டிடினோ
மிகு சீதளத்தால் விகார நீரிதனால்
மருத்து நோய் பாலவிருத்தர்க்கு மாமே."

A sort of bluish tinge in urine caused by extreme coldness and also by Vatha dominant diseases occurring in children and elderly people.

4.வாத பித்த கபங்களைக் கெடுக்கும் நீர் நிறம்:

"அம்ம நீலத்துரு வார்ந்துதடிக்கு மேல்
மும்மலச் சிதைவை முகளப்பிக்கு நீரே."

Apart from being bluish tinged if it is also viscous indicating underling derangement of the three humour the urine.

5.மும்மலங்களை மிகவும் அதிகமாகக் கெடுக்கும் நீர் நிறம்:

"சொக்கிலைப் பச்சையின் தோற்ற முளதெல்
மிக்கமும் மலங்கெடவிழு நீர் கொடிதே."

Urine appears frankly greenish as fresh foliage in diseases where all the humors are utterly deranged.

5.A.9.BLACKISH CHANGES IN URINE:

1.காமாலை நோயைத்தரும் நீர் நிறம்:

"வான்மீக மெழிற்குண் மைக்குண முறினது
தான் காமாலை நோய் தருமஃதின்றெனில்
பித்தநோயேனும்பிறக்கப்பணிக்குமே."

Black colour in a saffron colour background shows the Kamalai (Pitha disease) condition.

2. உதிரக் கெடுதி நீர் நிறம்.

"அம்மையுஞ் சிறிய செம்மையுஞ் சிவணினோ
அரத்தத்தழி வென்றறை தரு நீரே."

Saffron, black and little red coloured urine indicates a blood disorder

3.உதிரத் தழுக்கைக் காட்டும் நீர் நிறம்:

"கார்க்குள் புன்னரிக் கருவிரவிய தேனின்
ஆர்க்கத்தழுக்கை அறிவித்த நீரே."

Greenishness in dark coloured urine indicates unhealthy blood

4. சிலேத்தும வாதக் கெடுதி நீர் நிறம்:

"மையும் வெளிறும் மருவிய சாயை யேல்
ஐயுயிர் மிகக் கொதித் தழிவுறு நீரிது
காலாதீதக் கனல்பவத்துடையது
மாலாந்தருண சுரத்தர் விருத்தர்க்
குண்டாமை திரவியத்தூணாற் கொடிதே."

Dark and whitish colours in urine indicate upset of Vatha and pitha. Also it indicates chronic body heat disorders and complications of fevers in elderly and associated fainting.

5.A.10.WHITISH OR LIGHT COLOURED IN URINE:

1.சுத்த சீதள நீர் நிறம்:

"வெண்மையுற்று மிகத் தெளிவிடைத்தேல்
உண்மையாஞ் சுத்த சீதளத்துதகமாம்
ஒந்நீர்வசப்படாடிதிவனுய்யுந்தரம்
முந்நீர்ப் பெருக்கமிழ்வான் உய்தலொக்குமே."

Whitish or clear urine is usually because of sheer coldness of the body this condition is not amenable to medical treatment. A patient to get over from this condition is as it were a person having a new lease of life drowned in the raging sea.

2. சிலேத்துமத்தின் கொதிப்பு நீர் நிறம்:

"அறவெளிர்ப்பிலும் சளியைப் போல் விழினது
மறவன் அதி கொதிப்பால் வருவனமே.

In conditions of highly agitated 'coldness' of the body the urine is said to be not only highly clear but also little mucoid in appearance.

5.A.11.CHANGES IN THE DENSITY OF URINE:

“அற்பமுங் கன்மற்றதி தெளிவுறு மெனின்
வற்புறு சீதளம் மன்னிக் கனத்துக்
கபத்தை இளக்கலால் கண்ட நீர் இஃதே”

If the voided urine is denseless and crystal clear then it is due to excessive cold and to the melting of the kabam

5.A.12.ODOUR:

"ஓதமணத்தோ டவ்வோத மொத்தி றங்கும்
சீதளங் கம்மியே தேகிகளுக்கே."

1. சிறுநீர்ப்பை நாளப்புண்ணீர் மணம்

"வெய்ய துர்க்கந்தம் வீசுநீர் மூத்திரப்
பைநாளமிவற்றைப் பற்று புண்குறியே
அம்மொழியின்றென்னிலமே முதலிய
மும்மலச் சுதமே மூலமென் றுணரே."

An urine sample with atrocious odour indicates ulceration in the urinary tract and bladder.

2. உட்டிணரோக நீர் மணம்

"மட்டிற் புளிமண மணந்திழிந் திடினஃ
துட்டிணப் பிணிபிணிப்புற் றெழுநீரே
முடிவிலவுட்டிண முளரிவாயறல் போற்
படுசீதளச் சம்பந்தமாக்கிடுமே"

An urine sample with overwhelming odour of the tamarind points to the disorders of the body due to heat.

3. உதிரம் மிகுதியாலுண்டாகும் நீர் மணம்

"இனித்த மணத்தோ டிறங்கி நெய் மிக்குச்
சனித்த விருத்தியைத் தழுவிய நீரே
அல்லதவ் விருத்தி யாலாம் பிணிக் குழாத்த
தல்லதில் லென்பதாய்ந் தோர் மதமே."

Urine descending with a sweet flavour implies an increased haematopoiesis in diseases like leukaemia.

4. பித்த சுபாவக் கெடுதி நீர் மணம்

"கருமான் மணமே கமழுமென்றாலது
குரவன் சுபாவ குணங்கேடு நீரே"

Urine with a smell of dark coloured deer is voided in conditions of pitham dominance.

5. சரீரப்பசைக் கெடுதி நீர் மணம்

"புலால் மணங் கமழிற் போதிய பசைக்கே
டலாதிலை அந்நீக் குணமின்றெனில்
அடையுந் ததியெ றறையத் தான்மிகக்
கெடுதியெனங் கிளக்குஞ் சுருதியே"

Urine with a smell of fresh meat (carnivorous) will be in decreased body adipose tissue.

5.A.12. FROTH ON URINE

"பந்தமெய்ப் பசையிளகப்படும் பருவத்
தந்தர்ப் பூதமாய் அனில் மூத்திரத்தில்
சம்பந்தப்படும் ததிநுரைப் புனலே"

When the greasiness of the body is melted, it gets associated with the urine in the gad form to cause froth in it. This greasiness of the body normally adds resilience and resistance to the body. In conditions of impending jaundice the froth appears to be multi coloured with yellow and black and coloured appearance. The quantum of froth gets reduced in conditions of reduced humours of the body.

Similarly, reduced urine output inspite of having normal intake of water throws light on impending anaemic disorders and associated lassitude.

5.B. NEIKKURI

5.B.1. நெய்க்குறியின் சிறப்பு

"ஐக்குறி கொடுவட வானிழ லமர்ந்தோர்
கைக்குறி தெரித்த நங்கடவுளைத் துதித்தே
மெய்க்குறி நிறந்தொணி விழிநா இருமலம்
கைக்குறி முழுவதூங் கற்றார் தம்மினும்"

பொய்க்குறி மெய்க்குறி புகலு மெவர்க்கும்

நெய்க்குறி அதனை இந்நீணீலத் துரைப்பாம்”

Invoking the absolute reality who was assumed the form of gurupara, the lord facing south, seated in ayogic postura under the banyan tree, extolling the symbolic cinmudra by the very show of the right hand itself to the four sons of Brahmadeva, the chosen disciples lets us expound the formula of urine test us to get at the right clues for disease conditions without any doubt whatsoever as performed by our mystically intuited Siddha practitioners who have the command over the eight fold tests, without compounding one for the other, for the benefit of world at large.

5.B.2.எண்ணெய் விட்டுப் பார்க்கும் நீரின் விதி:

“நிறக்குறிக் குரைத்த நிருமாண நீரிற்

சிறக்க வெண்ணையோர் சிருதுளி நடுவிடுத்

தென்றுறத் திறந்தொலி ஏகாதமைத்ததி

னின்றதிவலை போம் நெறிவிழியறிவும்

சென்றது புகலுஞ் செய்தியை யுணரே.”

The urine collected should follow the same procedure like the general examination of urine. A drop of oil is dropped on centre of bowl without any shake. It should be ensured that the sunlight falls on it, but it should not be disturbed by the wind. A keen observation with our knowledge on the oil drop suggests the condition of the patient.

எண்ணெய் நீர்க்குறி

கல்வி சாத்திரங்கள் கற்ற கனதவ முனிவ ராய்ந்து

சொல்லுமுத் திரப்ப ரீட்சை சொற்றிட வினிது கேண்மின்

அல்லிடைச் சாம மொன்று சென்றத னப்பால் நீரை

நல்லபீங் கானில் வாங்கி நல்லெண்ணெய் விட்டுப் பாரே

- அங்காதிபாதம்

5.B.3.GENERAL NATURE OF URINE IN OIL-EXAMINATION:

“அரவென நீண்டினஃகே வாதம்”

“ஆழி போற்பரவின் அஃதே பித்தம்”

“முத்தொத்து நிற்கின் மொழிவதென் கபமே”

If the oil drop takes the shape of a snake, it indicates Vatha disease. if it spreads like a ring it indicates Pitha diseases and if it stands like a pearl it indicates Kapha diseases.

SHAPE OF THE OIL DROP IN COMBINED DERANGEMENT OF HUMOR:

“அரவிலாழியும் ஆழியில் அரவும்

அரவின் முத்தும் ஆழியில் முத்தும்

தோற்றில் தொந்த தோடங்களாமே”

If there is a combined shape like a ring in a snake or snake in the ring, snake and a pearl or a pearl in the ring, it indicates combined derangement of humors.

SIGNS OF THREE HUMORS:

“அமுந்து நெய்த்துளி அதுவுமும்மலத்தில்

எழுந்தகுறிகளெல்லா மொன்றில்

தோற்றுவது முத்தோட மென்றுன்னே”

If the oil drop sinks in the urine and if all features of the three humors are seen together in the urine. It suggests derangement of all three humors

5.B.4.SIGNS OF GOOD PROGNOSIS:

“விருத்தப்படிவமும் தரித்துப் பரவலும்

தேரித்த நெய்க்குறிக்கினி வருத்தமென்னுலகீர்

ஆங்கப்பரவல்போல் நீங்கும் எப்பிணியுமே.”

If the oil drop in the urine is round in shape and spreads gradually, it indicates good prognosis.

“அரிவாகு நத்தை அரியாதனத்தை

அறிதரு குறியால் மறுவின் றுயிர்க்கே.”

"நாணயச் சத்தியை வீணையைக் காணினோ
நாகுயிருடல் விடுத்தேகினும் மீளுமே."
"முல்லை யரும்பு குளரிப் பூவுஞ்
சொல்லிய துளியுள் தோற்றிடு மாயின்
இல்லை இல்லை நோயென்பது சரதமே."

If the oil drop takes the shape like Conch, Throne, Umbrella, Yazh (a stringed instrument), a lotus flower, Jasmine bud suggests good prognosis.

SIGNS OF CURABILITY:

"இன்னமுங் குறிகள் கேட்கில்
இப்படிப் பலவா றுண்டு
இன்னுமந் நீரி லெண்ணெய்
விட்டுநாம் பார்க்குங் காலை
மன்னிய வைபவங்கள்
மனிதர்போல் மச்சங் கொவில்
உன்னிய பிரகாரம் போல்
உயர்ந்திடு ஆனை போலும்"

If the oil drop in the urine spreads like Ritual fire, Human being, Fish, Temple corridors, Elephant it is curable.

SIGNS OF CURABILITY:

"மலைகுடை விருக்கம் வெண்சா
மரையுடன் தாமரைப்பூ
கொலைசெய்யு மானைக் கொம்பு
குல்லாய்கண் ணாடி சங்கு
வலைவிழி யாளே கேளாய்
மகரதோ ரணங்கள் பூமி
தலைமையாம் வீணை போலும்
சவுக்கமா மனையே போலும்"

Further, if the oil drop takes the shape like Hill, Umbrella, Tree, A fan made of fur, Lotus flower, the tusk of a wild elephant, Cap, Mirror, Conch Tapestry, Earth, lute and the square shaped house it is curable.

SIGNS OF CURABILITY:

பாகலி நிலையே வண்டும்
பகருந்தா மரையின் மொக்கும்
ஏகசிங் காத னங்கள்
இவைகள்போ லுருவங் கண்டால்
தேகமா நிடரி டத்தில்
சேர்ந்திருந் திடுக்கண் செய்யும்
ரோகமே நிற்க மாட்டா
துரைக்குஞ்சாத் தியக்கு றிப்பே

If it is in the shape of the leaf of bitter gourd, bee, buds of lotus and throne, the disease is curable.

5.B.5. SIGNS OF INTRACTABILITY:

"மத்தளங் கொடியெ பானை
மலமுண்ணும் பன்றி காட்டில்
வைத்திடு மிருக நாட்டில்
வாழ்ந்திடுங் குயவன் பண்ணுஞ்
சுத்தமாஞ் சக்க ரம்போல்
தோன்றிடு முருவன்ஹ் கண்டால்
சத்திய மாகச் சொன்னோம்
தாமத சாத்தி யந்தான்"

If the oil drop takes the shape of a drum, flag, pot, pig, jungle beast and potter's wheel the cure is slow and with some difficulty.

5.B.6.SIGNS OF INCURABILITY:

"நாலுகா லொருகா லிந்த
ஞாலத்தி லுரைக்கு மூன்று
காலுள மனிதர் காயம்
கனக்கவே பெருத்த மாந்தர்
மாலுறத் தலையில் லாத
மாந்தர்முன் கையிற் கத்தி
சூலமே உலக்கை வில்லு
தோன்றிடு மரிவாள் பாம்பே "

If the oil drop takes the shape of an obese man, man with one, three or four legs, a headless body, or as if a person holding a dagger. Three headed spear, iron pestle, bow and sword. Snake the prognosis is bad.

பூனையே எலியே அம்பு
புகல்நண்டு சுரைக்காய் கோழி
கானிடைப் புலிகு ரங்கு
கண்ணழல் பொங்கு சிங்கம்
ஈனமில் குதிரை வெற்றி
லைக்கொடி மற்று முள்ள
ஊனமில் எருது காட்டில்
உழன்றிடுங் கரடி தானே"

Further, if the oil drops takes the shape of a cat, mouse, arrow, crab, bottle gourd, hen, tiger, monkey, lion, horse, betel, creeper, bull and bear the prognosis is bad.

பறந்திடும் பட்சி ஆமை
பகுருநற் றேளைப் போலும்
சிறந்தெண்ணெய் விட்ட போதிலும்
சிறியதாய்ச் சுருங்கி னாலும்
புறந்தருங் கூந்தல் மானே
பொங்கியெ பறந்திட் டாலும்
அறிந்திடுங் குறிக ளெல்லாம்
அசாத்தியக் குறிப்புத் தானே

If the oil drop takes the shape of a bird scorpion tortoise or if it it non spreading or spreads very fast by it suggests bad prognosis.

“செய்ய நல்லெண்ணெய் தன்னைச் சிறுநீரில் விட்ட போது
இயமதுறவே தாழ்ந்தா லசாத்தியக் குறியே யாகும்
உய்வதுமரிதா மாதி ஒரு பொருளுடைய சித்தம்
எய்துவதே யல்லாம் லெம்மனோ ரியம்பொண் ணாதே”

If the gingely oil drop sinks in urine it indicates bad prognosis.

SIGNS OF BAD PROGNOSIS:

“எண்ணெய் விடின் சரேலெனப் பொங்கிப் பரவின்
திண்ணமப் பிணிக்குச் சிகிச்சையிறங்கின்றே.”
”விடுதுளி சிதறி வெவ்வெற்றொன்றாமல்
கடுகெனப் பரவின் கைவிடல் முறையே.”
”அவியு மூத்திரமு மனைந்தொன்றினாவி
அவியும் என்றால் கௌதமர் அறையே.”
”ஓதுவ நெய்த்துளி இள்ளமுந்தில் தீதென
மாதவ கற்பம் மன்னப்பயிலுமே.”
”அம்புகட் கம்முசலம் சூலமொடுவாள்
கும்பம் வெள்ளிலையெனக் குறிபடின் தீதே.

If the oil spreads fast or becomes small like a mustard or gets mixed completely with urine or sinks in urine, it suggests bad prognosis. Further if the oil drop takes the shape like Sword, Arrow, Iron pestle, Three headed spear, Pot, Betel leaf indicates bad prognosis.

“எருதறு கியாளம் இபம்புலி மறியரி
நரனர வழுங்குபுள் நரிமர்க் கடகரம்
பூசைதேளி வற்றைப் போலுரு தோற்றின்
பேசுவதென்னைப் பிணி தணியாவே.”

If the oil drop takes the shape like Lion, Elephant, Tiger, Ram, PigMan, Tortoise, Bird, Fox, Monkey, Ass, Cat, Scorpion indicates bad prognosis.

5.B.7.CURABLE AND INCURABLE STATES OF DISEASES:

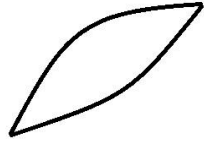
சல்லடைக் கண்போல் தனித்தனித் துவாராமாய்ச்
சொல்லுமுன் அற்றிடில் தொடலென கரமெனக்
கௌதமர் உரைப்பினும் கபத்தால் கண்படும்
தவியா அணங்கது சாத்தியம் என்பரே.”

If the oil drop takes the shape of a sieve, it suggests Kapha diseases. according to *Gowthama*, it is incurable but others say it is curable.

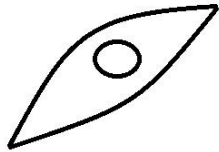
5.B.8.HUMORAL(KUTTRAM) BASIS :

Acoording to the Theriyar Neerkkuri Neikkuri Vathiyam,

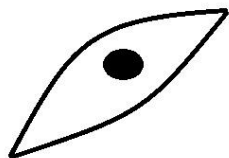
VATHAM



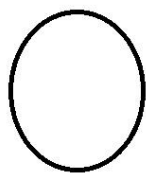
VATHA PITHAM



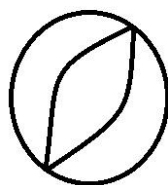
VATHA KABAM



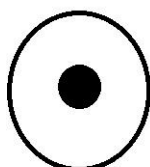
PITHAM



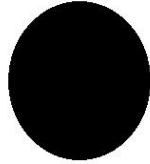
PITHAVATHAM



PITHAKABAM



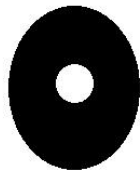
KABAM



KABAVATHAM



KABAPITHAM



6. MODERN ASPECTS

6.A. JOINTS

6.A.1.Introduction

The bones of the skeleton are joined by a variety of structural arrangements collectively termed as 'Joints'. Joints allow differential growth to the remission of forces and movements.

6.A.2.Normal structure of joints:

The joints are two types

- Diarthrodial or synovial joints with a joint cavity.
- Synarthrodial or nonsynovial joints without a joint cavity.

Most of the diseases of joints affect diarthrodial or synovial joints. In diarthrodial joints, the ends of the two bones are held together by joint capsule with ligaments and tendons inserted at the outer surface of the capsule. The articular surfaces of bones are covered by hyaline cartilage which is thicker in weight-bearing areas than in nonweight-bearing areas. The joint space is lined by synovial membrane or synovium which forms synovial fluid that lubricates the joint during movements. The synovium may be smooth or thrown into numerous folds and villi. The synovial membrane is composed of inner layer of 1-4 cell thick synoviocytes and outer layer of loose vascular connective tissue.

6.A.3.The structure of the joint consists of:

(i) Soft tissues,

1. Joint space – joint space contains articular cartilage with thin film of synovial fluid.
2. Joint capsule and ligaments – The size of the capsule varies as per the joint involved, Small joints have close filling joint capsules, but larger joints like knee and hip have larger joints capsule.

3. Periarticular tissue – The soft tissue covering the periosteum is called periarticular soft tissue.

(ii) Bone ends,

In adults it consists of,

- Sub articular cortex
- Joint margin
- Medulla

In younger age group it consists of,

- Epiphysis
- Diaphysis

(ii) Structure of synovial joints:

The majority of joints in our body are synovial joints. In this type the bone ends are not directly connected by any tissue. They have smooth articular surface covered by a layer of hyaline cartilage. Two bones are held together by a capsule made up of fibrous tissue. The capsule encloses the articular surfaces within a joint cavity. The capsule is lined by a synovial membrane which secretes a synovial fluid that acts as a lubricating agent and provides nourishment to the articular cartilage

6.A.4.CLASSIFICATION OF JOINTS

1. Fibrous (Synarthrodial) – immovable joints found in cranial vault and teeth
2. Cartilaginous (Synchondroses and Symphyes) – partially movable joints
3. Synovial joints (Diarthrosis) –freely movable joints are the most common joints found in the skeleton

Uniaxal joints

- Hinge joint (Elbow and Knee)
- Pivot joint (Neck, Atlas and Axis bones)

Biaxial joint

- Saddle joint (Thumb)
- Condylar joint (Wrist)

Multi axial joint

- Ball and socket joint (Shoulder and Hip)
- Gliding joint (Intercarpal)

6.A.5.ARTHRITIS

Arthritis is a non-specific term denoting acute or chronic inflammation of the joint. Clinically, arthritis falls in to the following groups

1. Osteoarthritis

- Primary
- Secondary

2. Rheumatoid arthritis

- Adult
- Juvenile

3. Infective arthritis

- Acute
- Chronic

4. Metabolic arthritis

- Gout
- Pseudogout

Nonspecific monoarthritis

Neuropathic joint disorders, e.g Charcot's

Special forms - Hemophilic arthritis, Psychogenic arthritis and Psoriatic arthritis

6.B.RHEUMATOID ARTHRITIS:

6.B.1.Introduction:

Rheumatoid arthritis (RA) is a chronic multisystem disease. Although there are a variety of systemic manifestations, the characteristic feature of established RA is persistent inflammatory synovitis, usually involving peripheral joints in a symmetric distribution. The potential of the synovial inflammation to cause cartilage damage and bone erosions and subsequent changes in joint integrity is the hallmark of the disease. Despite its destructive potential, the course of RA can be quite variable.

6.B.2.Epidemiology:

The prevalence of RA is ~0.8% of the population (range 0.3–2.1%); women are affected approximately three times more often than men. The prevalence increases with age, and sex differences diminish in the older age group. RA is seen throughout the world and affects all races. However, the incidence and severity seem to be less in rural sub-Saharan Africa and in Caribbean blacks. The onset is most frequent during the fourth and fifth decades of life, with 80% of all patients developing the disease between the ages of 35 and 50. The incidence of RA is more than six times greater in 60- to 64-year-old women compared to 18- to 29-year-old women.

The prevalence of rheumatoid arthritis was studied in the adult Indian population. The target population comprised 44,551 adults (over 16 years old). A response rate of 89.5% was obtained and 3393 persons were listed as possible cases of RA by the health workers. Of these, 299 satisfied the revised ARA criteria for the diagnosis of RA, giving a prevalence of 0.75%. Projected to the whole population, this would give a total of about seven million patients in India. The prevalence of RA in India is quite similar to that reported from the developed countries. It is higher than that reported from China, Indonesia, Philippines and rural Africa. These findings are in keeping with the fact that the north Indian population is genetically closer to the Caucasians than to other ethnic groups.

6.B.3.Genetics:

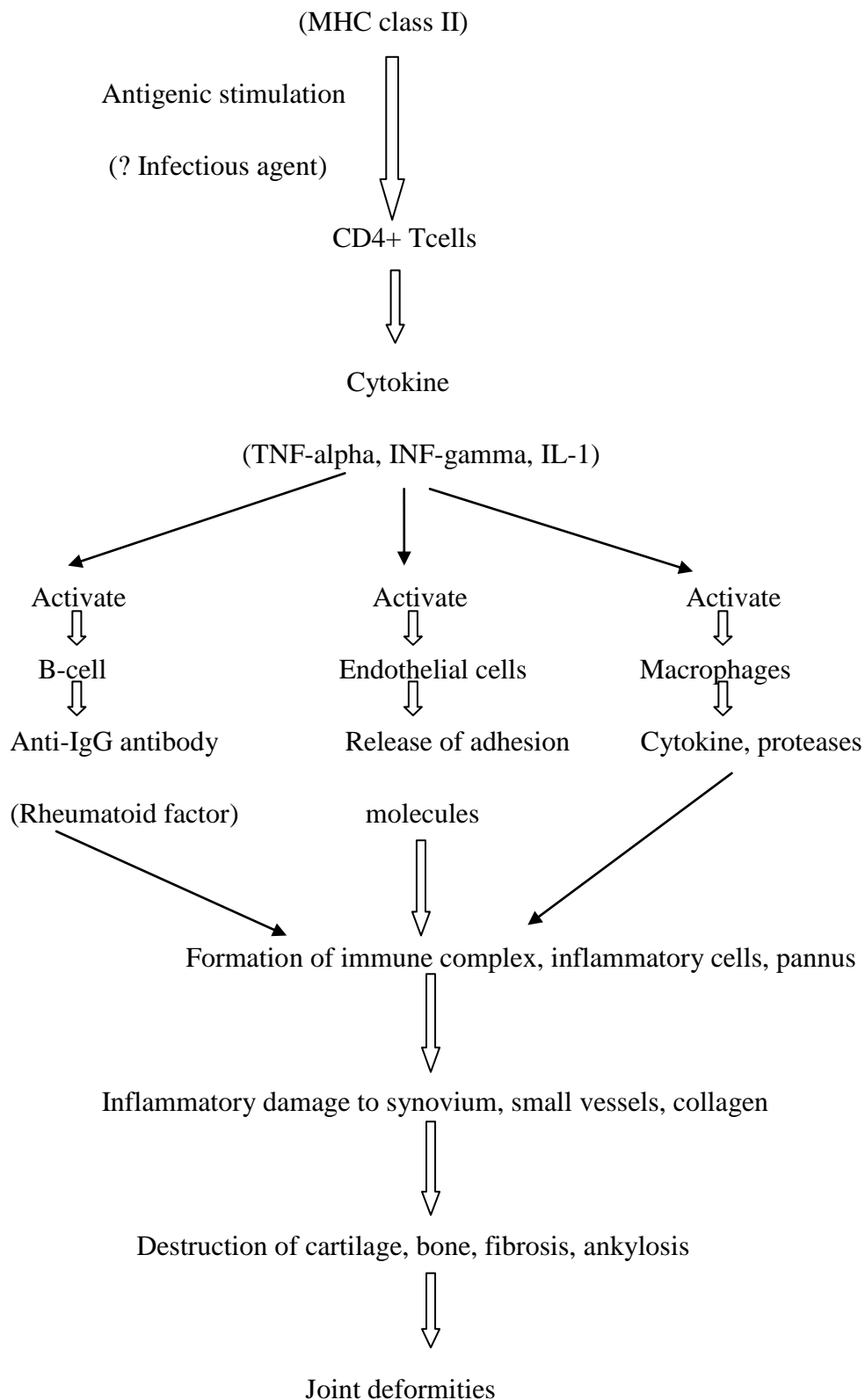
Family studies indicate a genetic predisposition. For example, severe RA is found at approximately four times the expected rate in first-degree relatives of individuals with disease associated with the presence of the autoantibody, rheumatoid factor. Moreover, monozygotic twins are at least four times more likely to be concordant for RA than dizygotic twins. Only 15–20% of monozygotic twins are concordant for RA, however, implying that factors other than genetics play an important etiopathogenic role.

Despite this, genetic factors are thought to explain ~60% of the disease susceptibility of RA. Of note, the highest risk for concordance of RA is noted in twins who have two HLA-DRB1 alleles known to be associated with RA. The class II major histocompatibility complex allele HLA-DR4 and related alleles are known to be major genetic risk factors for RA. Early studies showed that as many as 70% of patients with RA express HLA-DR4 compared with 28% of control individuals. This association is particularly strong for individuals who develop RA associated with antibodies to cyclic citrullinated polypeptides (CCP).

6.B.4.Etiology:

The cause of RA remains unknown. It has been suggested that RA might be a manifestation of the response to an infectious agent in a genetically susceptible host. Because of the worldwide distribution of RA, it has been hypothesized that if an infectious agent is involved, the organism must be ubiquitous. A number of possible causative agents have been suggested, including *Mycoplasma*, Epstein-Barr virus (EBV), cytomegalovirus, parvovirus, and rubella virus, but convincing evidence that these or other infectious agents cause RA has not emerged. The process by which an infectious agent might cause chronic inflammatory arthritis with a characteristic distribution also remains unknown.

6.B.5.PATHOLOGY: Genetic susceptibility



6.B.6.PATHOGENESIS:

Present concept on aetiology and pathogenesis proposes that RA occurs in an immunogenetically predisposed individual to the effect of microbial agents acting as trigger antigen. The role of super antigens which are produced by several microorganisms with capacity to bind to HLA-DR molecules (MHC-II region) has also emerged.

I. Immunologic derangements:

A number of observations in patients and experimental animals indicate the role of immune processes, particularly autoimmune phenomenon, in the development of RA. These include the following:

1. Detection of circulating autoantibody called rheumatoid factor against Fc portion of autologous IgG in about 80% cases of RA. RF antibodies are heterogeneous and consist of IgM and IgG class.
2. The presence of antigen-antibody complexes (IgG-RF complexes) in the circulation as well as in the synovial fluid.
3. The presence of other auto antibodies such as antinuclear factor (ANF), antibodies to collagen type II, and antibodies to cytoskeleton.
4. Antigenicity of proteoglycans of human articular cartilage.
5. The presence of gamma- globulin, particularly IgG and IgM, in the synovial fluid.
6. Association of RA with amyloidosis
7. Activation of cell-mediated immunity as observed by presence of numerous inflammatory cells in the synovium, chiefly CD4+ T lymphocytes and some macrophages.

II. Trigger events:

Though the above hypothesis of a possible role of autoimmunity in the aetiology and pathogenesis of RA is generally widely accepted, controversy

continues as regards the trigger events which initiate the destruction of articular cartilage. Various possibilities which have been suggested are as follows:

1. The existence of an infectious agent such as mycoplasma, Epstein-Barr virus, cytomegalovirus, or rubella virus, either locally in the synovial fluid or systemic infection some time prior to the attack of RA.

2. The possible role of HLA-DR4 and HLA-DR1 in initiation of immunologic damage.

The proposed events in immunopathogenesis of RA are as under:

In response to antigenic exposure (e.g infectious agent) in a genetically predisposed individual (HLA-DR) ,CD4+ -cells are activated.

These cells elaborate cytokines, the important ones being tumour necrosis factor (TNF)-alpha, interferon (IF)- gamma, interleukins (IL) and IL-6.

These cytokines activate endothelial cells, B lymphocytes and macrophages.

Activation of B-cells releases IgM antibody against IgG (i.e anti-IgG); this molecule is termed rheumatoid factor.

IgG and IgM immune complexes trigger inflammatory damage to the synovium, small blood vessels and collagen.

Activated endothelial cells express adhesion molecules which stimulate collection of inflammatory cells.

Activation of macrophages releases more cytokines which cause damage to joint tissues and vascularisation of cartilage termed pannus formation.

Eventually damage and destruction of bone and cartilage are followed by fibrosis and ankylosis producing joint deformities.

6.B.7.Clinical Manifestations

Onset:

Characteristically, RA is a chronic polyarthritis. In approximately two-thirds of patients, it begins insidiously with fatigue, anorexia, generalized weakness, and vague musculoskeletal symptoms until the appearance of synovitis becomes apparent. This prodrome may persist for weeks or months and defy diagnosis. Specific symptoms usually appear gradually as several joints, especially those of the hands, wrists, knees, and feet, become affected in a symmetric fashion. In ~10% of individuals, the onset is more acute, with a rapid development of polyarthritis, often accompanied by constitutional symptoms, including fever, lymphadenopathy, and splenomegaly. In approximately one-third of patients, symptoms may initially be confined to one or a few joints. Although the pattern of joint involvement may remain asymmetric in some patients, a symmetric pattern is more typical.

Insidious	-	75%
Acute	-	15%
Sub acute	-	10%
Monoarticular	-	20%
Palindromic	-	5%
Oligo articular	-	45%
Poly articular	-	35%

6.B.8.Signs and Symptoms of Articular Disease:

Pain, swelling, and tenderness may initially be poorly localized to the joints. Pain in affected joints, aggravated by movement, is the most common manifestation of established RA. Generalized stiffness is frequent and is usually greatest after periods of inactivity. Morning stiffness of >1-h duration is an almost invariable feature of inflammatory arthritis. The majority of patients will experience constitutional symptoms such as weakness, easy fatigability, anorexia, and weight

loss. Although fever to 40°C occurs on occasion, temperature elevation in >38°C is unusual and suggests the presence of an intercurrent problem such as infection.

Clinically, synovial inflammation causes swelling, tenderness, and limitation of motion. Initially, impairment in physical function is caused by pain and inflammation, and disability owing to this is a frequent early feature of aggressive RA. Warmth is usually evident on examination, especially of large joints such as the knee, but erythema is infrequent. Pain originates predominantly from the joint capsule, which is abundantly supplied with pain fibers and is markedly sensitive to stretching or distention. Joint swelling results from accumulation of synovial fluid, hypertrophy of the synovium, and thickening of the joint capsule. Initially, motion is limited by pain. The inflamed joint is usually held in flexion to maximize joint volume and minimize distention of the capsule. Later, fibrous or bony ankylosis or soft tissue contractures lead to fixed deformities.

Although inflammation can affect any diarthrodial joint, RA most often causes symmetric arthritis with characteristic involvement of certain specific joints such as the proximal interphalangeal and metacarpophalangeal joints. Synovitis of the wrist joints is a nearly uniform feature of RA and may lead to limitation of motion, deformity, and median nerve entrapment (carpal tunnel syndrome). Synovitis of the elbow joint often leads to flexion contractures that may develop early in the disease. The knee joint is commonly involved with synovial hypertrophy, chronic effusion, and frequently ligamentous laxity. Pain and swelling behind the knee may be caused by extension of inflamed synovium into the popliteal space (Baker's cyst). Arthritis in the forefoot, ankles, and subtalar joints can produce severe pain with ambulation as well as a number of deformities. Axial involvement is usually limited to the upper cervical spine. Involvement of the lumbar spine is not seen, and lower back pain cannot be ascribed to rheumatoid inflammation.

6.B.9.Extra articular Manifestations of Rheumatoid Arthritis:

Musculoskeletal:

Muscle wasting (small muscles of the hand)

Myalgias , vague arthralgias

Tenosynovitis , bursitis

Osteoporosis

Haematological:

Normocytic hypochromic anaemia

Thrombocytopenia

Eosinophilia

Lymphatic system:

Localized and generalized lymphadenopathy

Splenomegaly

Gastrointestinal system:

Xerostomia

Parotid enlargement

Dysphagia

Mesenteric artery occlusion

Renal system:

Pyelonephritis

Amyloidosis

Ocular manifestations:

Episcleritis

Scleritis

Keratoconjunctivitis sicca

Keratomalacia

Cardiac involvement:

Pericarditis

Myocarditis

Endocarditis

Conduction defects

Coronary vasculitis

Pulmonary involvement:

Pulmonary nodules

Pleural effusion

Fibrosing alveolitis

Pneumonia

Chronic bronchitis

Caplan's syndrome

Neurological manifestation:

Autonomic neuropathy

Peripheral neuropathy

Compression neuropathies-carpel tunnel syndrome,
cervical cord compression,
median nerve, posterior tibial nerve compression.

6.B.10.Deformities in Rheumatoid Arthritis:

- Swan neck deformity (intrinsic plus deformity)
- Boutonniere or button hole deformity
- Z deformity or hitch - hiker's thumb
- Baker's cyst
- Hammer toe, claw toes
- Hallus valgus,
- Equinus deformity
- Trigger finger
- Trigger thumb
- Ulnar deviation of the hand

6.B.11.Criteria for diagnosing Rheumatoid Arthritis

1987 Revised Criteria for the Classification of RA

1. Guidelines for classification:

- a. Four of seven criteria are required to classify a patient as having rheumatoid arthritis (RA).
- b. Patients with two or more clinical diagnoses are not excluded.

2. Criteriae;

- a. Morning stiffness: Stiffness in and around the joints lasting 1 h before maximal improvement.
- b. Arthritis of three or more joint areas: At least three joint areas, observed by a physician simultaneously, have soft tissue swelling or joint effusions, not just bony overgrowth. The 14 possible joint areas involved are right or left proximal interphalangeal, metacarpophalangeal, wrist, elbow, knee, ankle, and metatarsophalangeal joints.
- c. Arthritis of hand joints: Arthritis of wrist, metacarpophalangeal joint, or proximal interphalangeal joint.
- d. Symmetric arthritis: Simultaneous involvement of the same joint areas on both sides of the body.
- e. Rheumatoid nodules: Subcutaneous nodules over bony prominences, extensor surfaces, or juxtaarticular regions observed by a physician.
- f. Serum rheumatoid factor: Demonstration of abnormal amounts of serum rheumatoid factor by any method for which the result has been positive in less than 5% of normal control subjects.
- g. Radiographic changes: Typical changes of RA on posteroanterior hand and wrist radiographs that must include erosions or unequivocal bony decalcification localized in or most marked adjacent to the involved joints.

6.B.12.Laboratory Findings:

No tests are specific for diagnosing RA. However, rheumatoid factors, which are autoantibodies reactive with the Fc portion of IgG, are found in more than two-thirds of adults with the disease and have classically been used to evaluate patients with RA. Widely utilized tests largely detect IgM rheumatoid factors. The presence of rheumatoid factor is not specific for RA, as rheumatoid factor is found in 5% of healthy persons.

The presence of rheumatoid factor does not establish the diagnosis of RA as the predictive value of the presence of rheumatoid factor in determining a diagnosis of RA is poor. Thus fewer than one-third of unselected patients with a positive test for rheumatoid factor will be found to have RA. Therefore, the rheumatoid factor test is not useful as a screening procedure. However, the presence of rheumatoid factor can be of prognostic significance. In summary, a test for the presence of rheumatoid factor can be employed to confirm a diagnosis in individuals with a suggestive clinical presentation and, if present in high titer, to designate patients at risk for severe systemic disease.

Antibodies to CCP can also be used to evaluate patients with RA. Although these antibodies are most commonly found in rheumatoid factor–positive patients, on occasion they can be detected in the absence of rheumatoid factor. In addition, the anti-CCP test has a similar sensitivity and a better specificity for RA than does rheumatoid factor. This is particularly the case in individuals with early RA, in whom assessment of anti-CCP may be the most useful to confirm the diagnosis and establish a likely prognosis. The presence of anti-CCP is most common in persons with aggressive disease, with a tendency for developing bone erosions. However, it is a useful test to confirm a diagnosis of RA and to estimate prognosis.

Normochromic, normocytic anemia is frequently present in active RA. It is thought to reflect ineffective erythropoiesis; large stores of iron are found in the bone marrow. In general, anemia and thrombocytosis correlate with disease activity. The white blood cell count is usually normal, but a mild leukocytosis may be present. Leukopenia may also exist without the full-blown picture of Felty's syndrome. Eosinophilia, when present, usually reflects severe systemic disease.

The erythrocyte sedimentation rate (ESR) is increased in nearly all patients with active RA. The levels of a variety of other acute-phase reactants including ceruloplasmin and C-reactive protein are also elevated, and generally such elevations correlate with disease activity and the likelihood of progressive joint damage.

Synovial fluid analysis confirms the presence of inflammatory arthritis, although none of the findings is specific. The fluid is usually turbid, with reduced

viscosity, increased protein content, and a slightly decreased or normal glucose concentration. The white cell count varies between 5 and 50,000/ L; PMNLs predominate. A synovial fluid white blood cell count >2000/ L with >75% polymorphonuclear leukocytes is highly characteristic of inflammatory arthritis, although not diagnostic of RA.

6.B.13.Radiological features:

Early changes:

- Soft tissue swelling
- Peri articular osteoporosis
- Erosions-Peri articular and sub articular cysts

Late changes:

- Articular surface irregularity
- Osteoporosis
- Subluxation
- Ankylosis
- Secondary osteoarthritis

6.B.14.Clinical Course and Prognosis:

The course of RA is quite variable and difficult to predict in an individual patient. The current therapeutic approach of early aggressive intervention appears to have mitigated the clinical course of RA, resulting in less persistent inflammation, disability, joint damage, and mortality. Classically, most patients had experienced persistent but fluctuating disease activity, accompanied by a variable degree of joint abnormalities and functional impairment. After 10–12 years, <20% of patients had no evidence of disability or joint abnormalities. Moreover, within 10 years, 50% of patients had work disability. All of these outcomes are thought to be positively influenced by early aggressive intervention. A number of features are correlated with a greater likelihood of developing joint abnormalities or disabilities. These include the presence of >20 inflamed joints, a markedly elevated ESR, radiographic evidence of bone erosions, the presence of rheumatoid nodules, high titers of serum rheumatoid factor or anti-CCP antibodies, the presence of functional disability, persistent inflammation, advanced age at onset, the presence of comorbid conditions.

6.C. URINE

6.C.1.Introduction

Kidney excretes the unwanted substances including metabolic end products and those substances, which are present in excessive quantities in the body, through urine.

Normally, about 1-1.5 litres of urine is formed every day. The mechanism of urine formation includes various processes. First, when blood passes through glomerular capillaries, the plasma is filtered into the Bowman's capsule. When this filtrate passes through the tubular portion of the nephron, it undergoes various changes both in quality and in quantity. Many wanted substances like glucose, amino acids, water and electrolytes are reabsorbed from the tubules. This process is called tubular reabsorption and some unwanted substances are secreted into the tubule from peri tubular blood vessels. This process is called tubular secretion or excretion.

Thus, the urine formation includes the following three processes:

1. Glomerular filtration
2. Tubular reabsorption
3. Tubular secretion

Filtration is the function of the glomerulus or renal corpuscle of nephron and, reabsorption and secretion are the functions of tubular portion of the nephron.

6.C.2. GLOMERULAR FILTRATION:

When the blood passes through the glomerular capillaries, the plasma is filtered into the Bowman's capsule. All the substances of the plasma are filtered except the plasma proteins. The filtered fluid is called glomerular filtrate. During filtration, the substances pass through three layers of structures namely:

1. The endothelium of glomerular capillary membrane
2. Basement membrane
3. Spaces between pedicles (fenestra) of epithelial cells of visceral layer of Bowman's capsule.

The glomerular filtration is called ultra filtration because; even the minute particles are filtered. But, the plasma proteins are not filtered due to their large molecular size. The protein molecules are larger than the slit pores present in the endothelium of capillaries. Thus, the composition of the glomerular filtrate is similar to that of plasma except in the absence of plasma proteins.

6.C.3. TUBULAR REABSORPTION:

When the glomerular filtrate passes through the tubular portion of nephron, both quantitative and qualitative changes occur. Large quantity of water (more than 99%), electrolytes and other substances are reabsorbed by the tubular epithelial cells. The substances, which are reabsorbed, pass into the interstitial fluid of renal medulla. And, from here, the substances move into the blood in peritubular capillaries. As the substances are taken back into the blood, the entire process is called tubular reabsorption.

SELECTIVE REABSORPTION:

The tubular cells of kidney selectively reabsorb the substances present in the glomerular filtrate, according to the needs of the body. So, the tubular reabsorption is called the selective reabsorption. Depending upon the degree of reabsorption, the various substances are classified into 3 categories.

1. High threshold substances:

The substances like glucose, amino acids, acetoacetate ions and vitamins are completely reabsorbed and do not appear in urine under normal conditions.

2. Low threshold substances:

Urea, uric acid and phosphate are reabsorbed to a lesser extent.

3. Non threshold substances:

The metabolic end products like creatinine are not at all reabsorbed and are excreted in urine irrespective of their level.

6.C.4. TUBULAR SECRETION:

In the process urine formation, some substances are also secreted into the lumen from the peritubular capillaries through the tubular epithelial cells. This is known as tubular secretion or tubular excretion.

Substances secreted in different segments of renal tubules

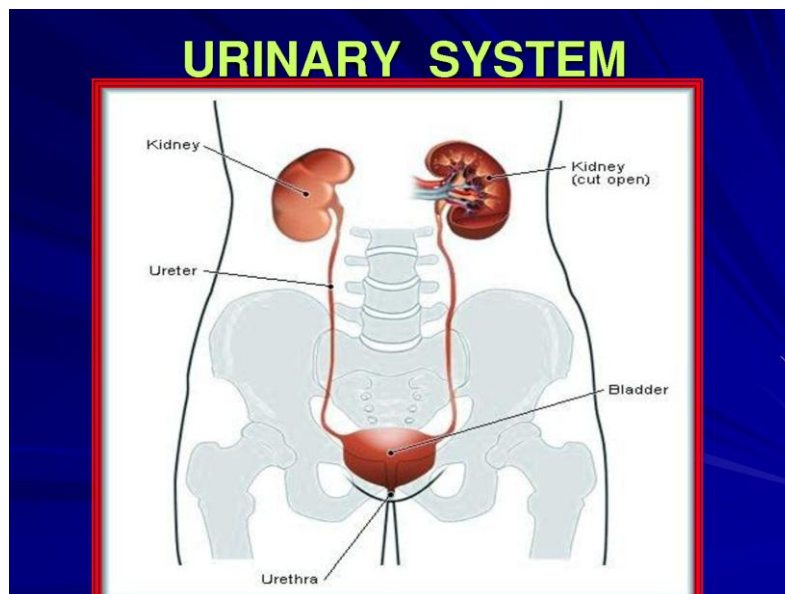
1. Potassium is secreted actively by sodium-potassium pump in distal convoluted tubule and collecting duct.

2. Ammonia is secreted in the proximal convoluted tubule.

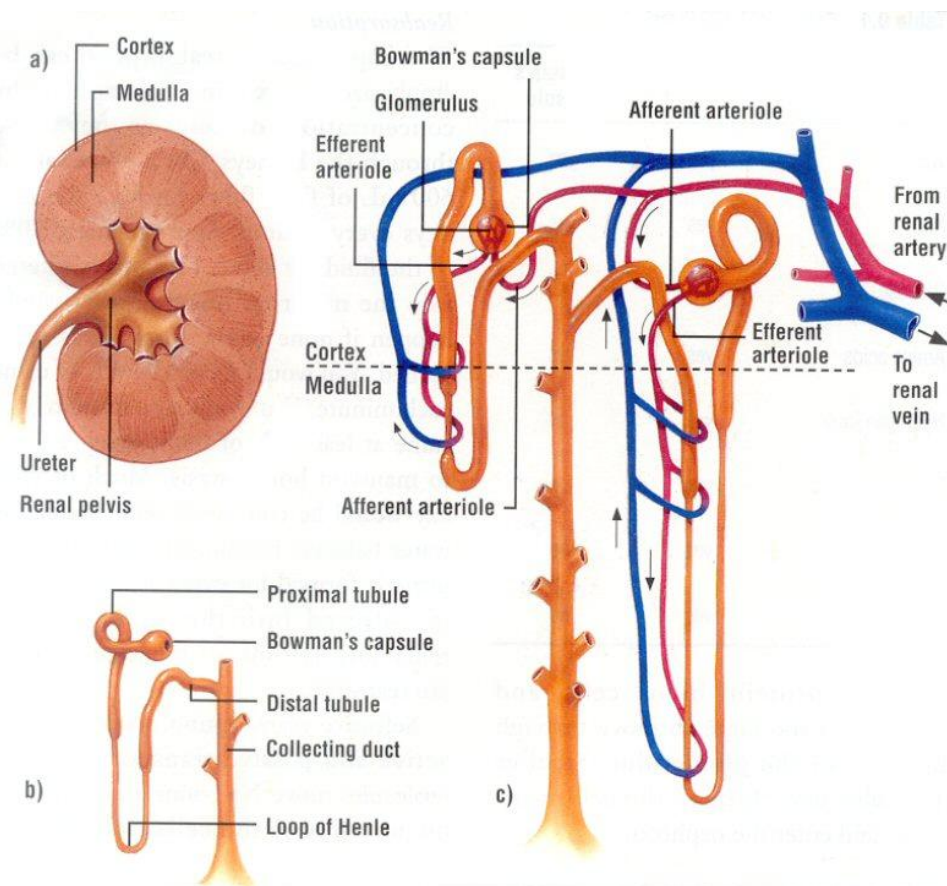
3. Hydrogen ions are secreted in the proximal and distal convoluted tubules.

Maximum hydrogen ion secretion occurs in proximal tubule.

Thus, by the processes of glomerular filtration, selective reabsorption and tubular secretion urine is formed in the nephron. It is also concentrated by counter current mechanism and ADH. Finally, it passes through ureter into the urinary bladder and, is stored there until it is voided out.



Urinary system



Kidney

6.C.5.COLLECTION OF URINE SAMPLE

TYPES OF COLLECTION:

Laboratory urine specimens are classified by the type of collection conducted or by the collection procedure used to obtain the specimen.

1.RANDOM SPECIMEN:

- Specimen most commonly sent to the laboratory for analysis,
- Usually submitted for urinalysis and microscopic analysis,
- Pediatric specimens are generally of this type.
- Can be collected at any time.

2. FIRST MORNING SPECIMEN:

- Also called an 8-hour specimen.

- The first morning specimen is collected when the patient first wakes up in the morning, having emptied the bladder before going to sleep.
- Since the urine can be collected over any eight-hour period, collection is practical for patients who have atypical work/sleep schedules.

3. MIDSTREAM CLEAN CATCH SPECIMEN:

- This is the preferred type of specimen for culture and sensitivity testing
- Because of the reduced incidence of cellular and microbial contamination.
- Patients are required to first cleanse the urethral area with a castile soap towel.
- The patient should then void the first portion of the urine stream into the toilet.
- These first steps significantly reduce the opportunities for contaminants to enter into the urine stream.
- The urine midstream is then collected into a clean container
- This method of collection can be conducted at any time of day or night.

4. TIMED COLLECTION SPECIMEN:

- 24 hour specimen
- Among the most commonly performed tests requiring timed specimens
- Measuring Creatinine, urine urea nitrogen, glucose, sodium, potassium, or analytes such as catecholamine and 17-hydroxysteroids that are affected by diurnal variations

5. CATHETER COLLECTION SPECIMEN:

- when a patient is bedridden
- Insert a Foley catheter into the bladder through the urethra to collect the urine specimen.

- Collected directly from a Foley into an evacuated tube or transferred from a syringe into a tube or cup.

6. SUPRAPUBIC ASPIRATION SPECIMEN:

- When a bedridden patient cannot be catheterized or a sterile specimen is required.
- The urine specimen is collected by needle aspiration through the abdominal wall into the bladder

7. PEDIATRIC SPECIMEN:

- For infants and small children,
- A special urine collection bag is adhered to the skin surrounding the urethral area.
- The urine is poured into a collection cup or transferred directly into an evacuated tube with a transfer straw.
- Urine collected from a diaper is not recommended

6.C.6. URINE COLLECTION CONTAINERS:

- Variety of shapes and sizes with lids.
- To protect healthcare personnel from exposure to the specimen
- protect the specimen from exposure to contaminants,
- Leak-resistant cups should be utilized.
- Some urine transport cup closures have special access ports that allow closed-system transfer of urine directly from the collection device to the tube.

6.C.7. PRESERVATIVES:

- should be added to the collection container before the urine collection begins
- Warning labels should be placed on the container.

- The least hazardous one should be selected.
- Some common 24-hour preservatives are hydrochloric acid, boric acid, acetic acid and toluene.

6.C8.VOLUME:

- Adults normally 700-2500ml (1200ml) of urine is passed in 24 hours.
- Infants-300ml

1. POLYURIA:

When excess of urine is passed in 24 hours (>2500ml).

Causes of transient polyuria:

- Excessive intake of fluids
- Anxiety
- During convalescence esp., ., after fever
- Recovery from oedema
- diuretics
- Diabetes mellitus
- Diabetes insipidus
- Chronic nephritis
- Arteriosclerosis.

2. OLIGURIA

When less than 500ml of urine is passed in 24 hours.

Causes:

- Acute and sub acute nephritis
- Diarrhoea/vomiting
- Fever
- Hypotension

- Congestive cardiac failure
- Obstruction to the urinary passage.
- Acute renal failure.

3. ANURIA:

When there is almost complete suppression of urine (<150ml) in 24 hours.

Pre Renal Causes:

- Non obstructive type
- Hypotension

Renal Causes:

- Obstructive type
- Acute nephritis
- TB of both the kidneys
- Polycystic kidney.
- pyelonephritis
- Black water fever
- Incompatible blood transfusion
- Intravascular haemolysis
- Poisoning by turpentine, cantharides.

Post Renal Causes:

- Calculi in the urinary passage
- Carcinoma of ureteral orifice
- Carcinoma of uterus infiltrating both the ureters
- Pelvic or abdominal tumours.

4. NOCTURIA:

When excess of urine is passed during night time (>500ml).

6.C.9.COLOUR:

Normally urine is clear , pale or straw coloured.



Normal straw coloured urine

1. COLOURLESS URINE:

- Diabetes mellitus
- Diabetes insipidus
- Excess intake of water.

2. ORANGE COLOUR URINE:

- Increased urobilinogen.
- Concentrated urine.
- Jaundice.



Orange Colour Urine

3. RED COLOUR URINE:

- Haematuria
- Haemoglobinuria



Red Colour Urine

4. GREEN COLOUR URINE:

- Putrified sample.
- Phenol poisoning.
- Administration of carbolic acid.



Green Colour Urine

5. BLUE COLOUR URINE:

Administration of Methylene



Blue Colour Urine

6 . MILKY URINE:

- Pus
- Fat
- Urinary Tract infection



Milky Urine

6.C.10. ODOUR OF URINE:

Normally urine has faint aromatic odour.

PUNGENT

It due to ammonia produced by bacterial contamination.

PUTRID:

It due to Urinary Tract infection.

FRUITY:

It due to ketoacidosis.

6.C.11.REACTION/PH:

It reflects ability of the kidney to maintain H^+ ions concentration in extra cellular fluid and plasma. It can be measured by PH indicator paper or by electronic PH meter.

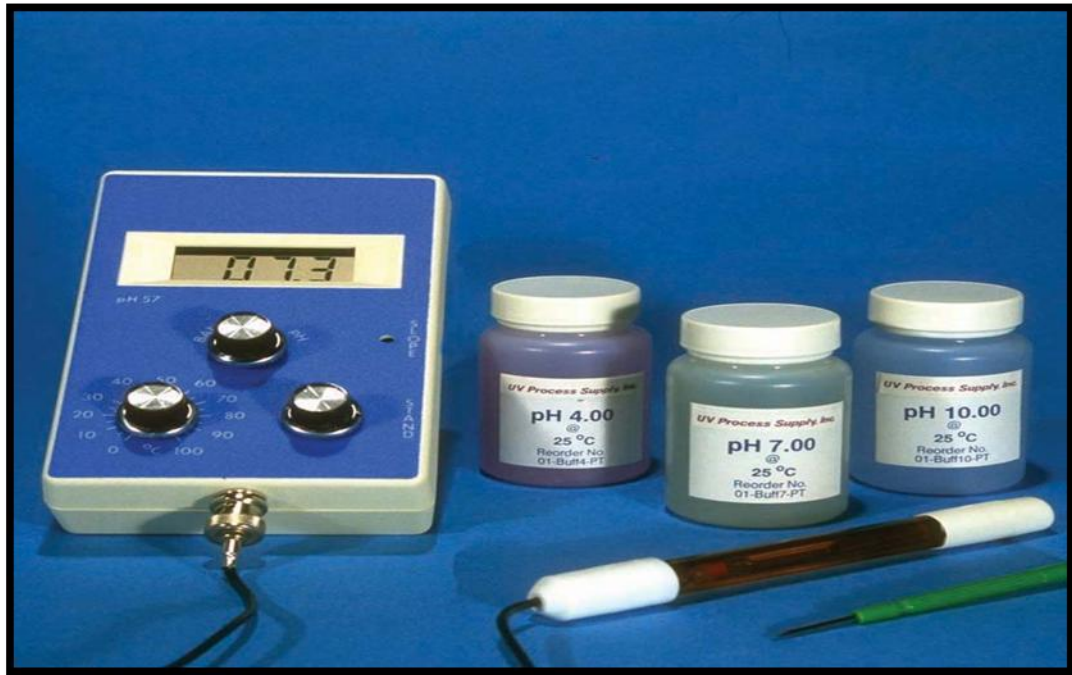
Normal PH range 4.6-7 (average-6.0).

Much of the variation is due to diet.

High protein diets - more acidic urine.

vegetarian diets - more alkaline urine

DIGITAL PH METER:



Digital PH meter

LITMUS PAPER METHOD:

4% Alcoholic solution of methyl red+ 5ml of urine.

Red colour - Acidic

Orange - Neutral

Yellow - Alkaline.



Litmus paper

6.C.12.SPECIFIC GRAVITY

This is the ratio of 1 ml volume of urine to that of weight of 1ml of distilled water. It depends upon the concentration of various particles/solutes in the urine. Specific gravity is used to measure the concentrating and diluting power of the kidney.

- Normal specific gravity 1.003-1.030
- Neonates-1.012

It can be used be measured by

- a. Urinometer
- b. Refractometer
- c. Reagent strips.



Urino meter

1. Low Specific gravity

- Diabetes insipidus
- Chronic renal diseases
- Acute tubular necrosis
- Interstitial nephritis

2. High specific gravity:

- Fever
- Dehydration
- Albuminuria
- Hematuria
- CCF
- Acute nephritis
- Diabetes mellitus

6.C.13.COMPOSITION OF URINE:

Approx. 95% of the volume of normal urine is due to water. The other 5% consists of solutes

1. ORGANIC MOLECULES:

- Urea
- Creatinine
- Uric acid
- Ammonia
- Purine bodies

2. INORGANIC MOLECULES:

- Sodium
- Potassium
- Chloride
- Magnesium
- Calcium
- Ammonium
- Phosphates

3. UREA EXCRETION INCREASED IN:

- High intake of protein diet
- Fever
- Diabetes mellitus
- Convalescence
- Poisoning like phosphorus and arsenic

3. UREA EXCRETION DIMINISHED IN:

- Starvation
- Chronic kidney diseases
- Liver cirrhosis

4. URIC ACID EXCRETION INCREASED IN:

- Myeloid leukaemia
- Acute fever
- Pneumonia
- Liver diseases

5. URIC ACID EXCRETION DECREASED IN:

- Quinine administration

6. CREATININE EXCRETION INCREASED IN:

- Pneumonia
- Typhoid
- Tetanus

7. CREATININE EXCRETION DECREASED IN:

- Anaemia
- Leukemia
- Thyrotoxicosis
- Advanced degeneration of kidney and liver
- Muscular atrophy

8. AMMONIA EXCRETION INCREASED IN:

- Ketosis
- Delayed chloroform poisoning
- Severe vomiting of pregnancy
- Liver cirrhosis.

6.C.14.CHEMICAL EXAMINATION:

Routine chemical examination of urine

- Protein
- Sugar
- Ketone bodies

- Occult blood
- Bile pigment
- Bile salt
- Urobilinogen

I. Test for Protein:

- Heat coagulation test
- Sulphosalicylic acid test
- Heller's test

II. Test for Sugar:

- Fehling's test
- Benedict's test

III. Test for Ketone Bodies:

- Rothera's test

IV. Test for Occult Blood:

- Guaiacum test
- Haematrix test

V. Test for Bile Pigments:

- Fouchet's test
- Gmelin's test

6.D.SESAME OIL:

Sesame oil (also known as gingelly oil or tir oil) is an edible vegetable oil derived from sesame seeds.

The oil from the nutrient rich seed is popular in alternative medicine-from traditional massages and treatments to modern day fads. Ancient Indian medical system perceives sesame oil to pacify stress related symptoms and on-going research indicates that the rich presence of anti-oxidants and poly-unsaturated fats in sesame oil could help in controlling blood pressure.

6.D.1.History:

Sesame seeds were one of the first crops processed for oil as well as one of the earliest condiments. In fact, the word ‘ennai’ that means oil in Tamil language has its roots in the Tamil words EL and NEI which mean sesame and fat.

6.D.2. ORGANIC SESAME OIL PROFILE:

Botanical Name	- Sesame indicum
Origin	- Mexico
Extraction	– Expeller Pressed/Unrefined
Shelf life	- 1 year

6.D.3.Specifications:

Colour	- Golden brown
Odour	- Nutty
Free fatty acids	– 0.79%
Peroxide value	- 1.26
Moisture	- 0.01%
Iodine value	- 109.8
Specific gravity	- 0.98
p ^H	– 4.26

6.D.4.FATTY ACIDS:

Linoleic	– 44.91%
Oleic	– 41.45%
Stearic	- 4.06%
Palmitic	- 7.83%

Nutritional value per 100 g (3.5 oz)	
Energy	3.699 kJ (884kcal)
Carbohydrate	0.00 g
Fat	100.00g
Saturated	14.200g
Monounsaturated	39.700 g
Polyunsaturated	41.700 g
Protein	0.00 g
Vitamin C	0.0 mg (0%)
Vitamin E	1.40 mg(9%)
Vitamin K	13.6 (13%)
Calcium	0 mg (0%)
Iron	0.00 mg (0%)
Magnesium	0 mg (0%)
Phosphorus	0 mg (0%)
Potassium	0 mg (0%)
Sodium	0 mg (0%)

7. MATERIALS AND METHODS

“A STUDY ON NEERKKURI NEIKKURI DIAGNOSTIC METHODOLOGY IN UTHIRAVATHASURONITHAM- RHEUMATOID ARTHRITIS” would be carried out in the Out patients and In Patients NoiNaadal Department of Ayothidoss Pandithar Hospital of the National Institute of Siddha, Tambaram Sanatorium, and Chennai 47.

7.1. POPULATION SAMPLE:

Out of the 80 cases screened, 40 diagnosed cases will be selected from the outpatient department and 20 normal subjects screened, 10 normal subjects will be selected. The study followed under the supervision of the HOD and Lecturers of the Noi Naadal Department.

7.2. SAMPLE SIZE:

Normal Healthy Volunteers	: 10
Uthiravathasuronitham patients	: 40
Total	: 50

7.3. SELECTION OF CASES:

Selection of cases is based on the screening of patient population as per the inclusion and exclusion criteria listed out in the Screening Proforma.

The patient population consists of patients attending the OPD/IPD of Ayothidoss Pandithar Hospital of National Institute of Siddha, Chennai.

7.4. STUDY PERIOD :
One year

7.5. INCLUSION CRITERIA:

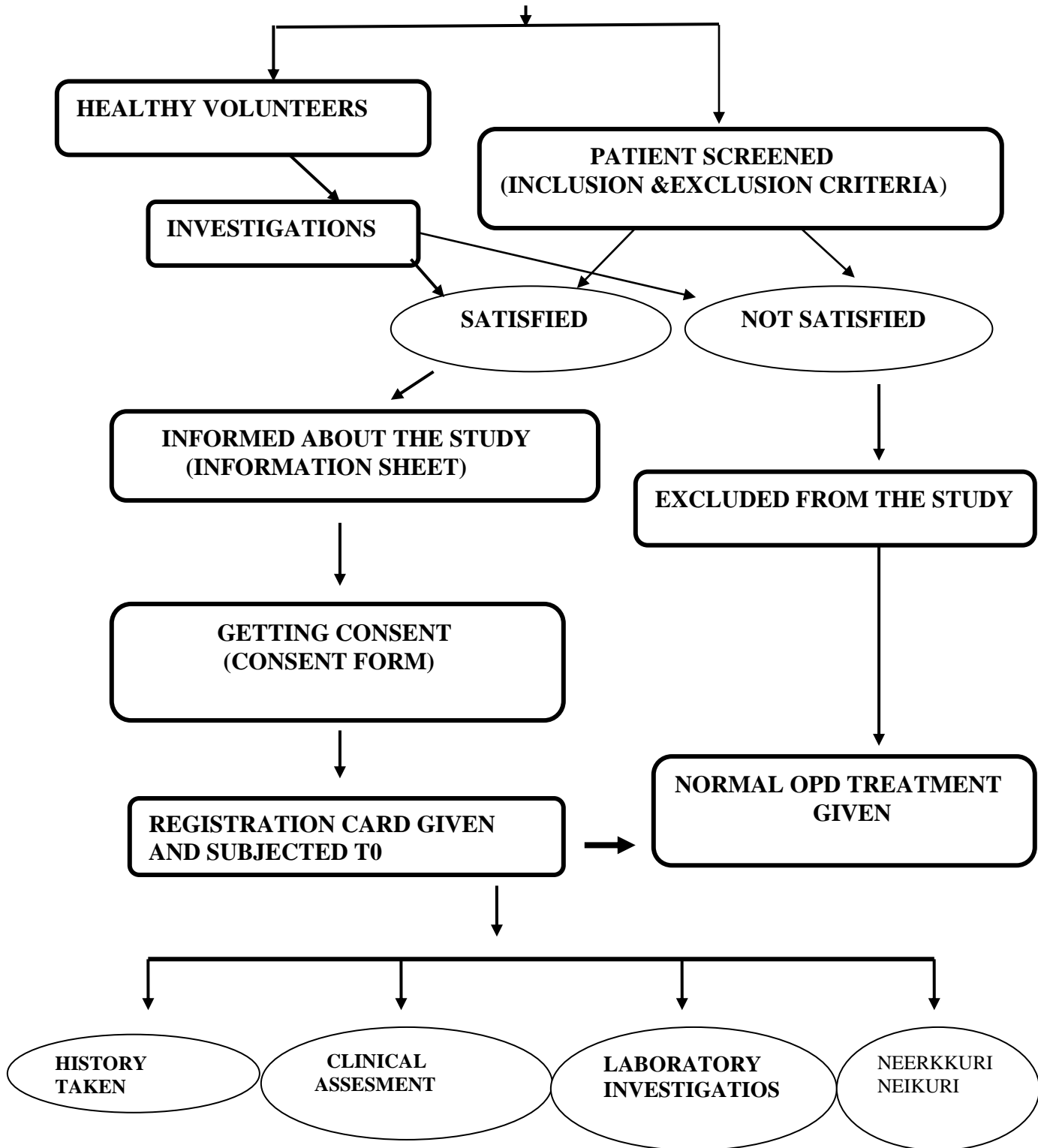
- Age: 18- 60 years in both sex
- Pain in the knee joint, ankle joint and inter phalangeal joints of the body
- Swelling of the knee joint, ankle joint and inter phalangeal joints of the body
- Loss of appetite.
- Patient who are willing to give blood and Urine samples for laboratory Investigation.

7.6. EXCLUSION CRITERIA:

- Major systemic illness
- Vulnerable group
- Complications of rheumatoid arthritis other than joint contracture.

7.7. METHODOLOGY

METHODOLOGY



7.8. EVALUATION OF CLINICAL PARAMETERS :

During examination, the cases were subjected to careful enquiry, which involved history taking and evaluate the Siddha parameters and modern parameters.

7.9. SIDDHA PARAMETERS:

The seven body components (Udal thathukal)

Trihumoural theory (Mukkutram)

The eight-fold examination (Ennvagai thervu)

Naa

Niram

Mozhi

Vizhi

Malam

Moothiram (Neerkkuri and neikkuri)

Sparisam

Naadi

Wrist circummetric sign (Manikadai Nool),

Habitat (Nilam),

Season (Kalam)

Astrology (Sothidam) of the patient would be assessed.

7.9. 1 NEERKKURI NEIKKURI PROCEDURE

7.9.1.A. PREPARATION OF THE PATIENT:

DIET PATTERN:

Quality- Balanced food type of with appropriate proportion of all six tastes and humors.

Quantity- Upto the level of his appetite

SLEEP PATTERN

Sound sleep

7.9.1.B. METHOD OF URINE COLLECTION:

The mid stream urine should be collected in a sterilized container and it should be closed at tight.

7.9.1. C. NEERKKURI PROCEDURE:

In Neerkkuri, five physical properties of the urine should be noted.

They are

1. Colour:

The colour of the urine should be noted with naked eye and the photos of the colour are documented.

2. Odour:

The odour of the urine should be noted.

3. Froth:

The patient should be enquired whether the froth present are not in the urine, immediately after collecting the mid stream urine.

4. Density:

Density of the urine should be measured by using Urinometer

5. Deposits and volume:

24 hours urine should be collected in the urinary container and the volume of the urine is noted.

7.9.1.D. pH OF THE URINE:

The pH of urine is measured by using the digital PH meter.

7.9.1.E NEIKKURI PROCEDURE:

I. SOURCE OF OIL:

Oil will be procured from mill as freshly ground Gingely seeds in millstone (chekku) without any additives being added to avoid variations in the investigations.

Because the presently marketed Gingely oils are treated with additives for which the reason I have chosen the above method of additive free preparation.

II. SELECTION OF BOWL:

I have selected a glass bowl of 200 ml quantity with wide neck.

III. SELECTION OF STICK:

Coconut leaf mid rib.

IV. METHOD OF OIL INSTILLING:

Distance between the bowl& the oil stick is 3-4 cm. below 3cm, the stick may touch the bowl. Above 5cm, the oil may be dispersed due to air or it may cause ripples over the surface of the urine sample interfering with the results of the examination.

A drop of oil is dripped on centre of bowl without any shake. It should be ensured that the sunlight should fall on it, but it should not be disturbed by the wind.

The above Neikkuri procedure is repeated (except physical and chemical urine analysis) for the next two consecutive days.

V. OBSERVATION AND DOCUMENTATION OF NEIKKURI:

A keen observation with our knowledge on the oil drop suggests the condition of the patient and photos will be documented with standard Digital imaging.

5 slides of picture will be taken

1. 1 minute after dropping of oil.
2. After 3 minutes.
3. After 5 minutes.
4. After 7 minutes.
5. After 10 minutes.

7.10. MODERN PARAMETERS:

1. BLOOD:

Haemogram
HB
ESR
RBC
TC
DC
Platelet count
Blood sugar
Urea
Creatinine
Cholesterol
HDL
LDL
VLDL
Alkaline phosphatase
Triglycerides

2. URINE:

Albumin
Sugar
Acetone
Bile salt

Bile pigment

Urobilinogen

Occult blood

Urine deposits (Pus cells, Epithelial cells ,RBC, Crystals).

p^H

Specific gravity

3. MOTION TEST:

Ova

Cyst

Occult blood

4. OTHERS:

RA factor

CRP

ASO TITER

X-Ray

7.11. DATA MANAGMENT

- After enrolling the patient in the study, a separate file for each patient was be opened and all forms were filed in the file. Patient No. were entered on the top of file for easy identification and arranged in a separate rack at the concerned OPD unit. Whenever study patient visits OPD during the study period, the respective patient file were taken and necessary recordings were made at the case record form or other suitable form.
- The Data recordings were monitored for completion and compliance of patients by HOD.
- Any missed data found in during the study, it were collected from the patient, but the time related data were not be recorded retrospectively
- All collected data were entered using MS access/ excel software onto computer. Investigators were trained to enter the patient data and cross checked by SRO.

7.12. STATISTICAL ANALYSIS

All collected data were entered into computer using MS Access / MS Excel Software by the investigator. The data were analyzed using STATA Software under the guidance of SRO (stat), NIS. The level of significance was 0.05. Descriptive analysis was made and necessary tables / graphs generated to understand the profile of patients included in the study. The Statistical analysis for significance of different diagnostic Neerkkuri – Neikkuri were done. Student 't' test and chi-square test, are proposed to be performed for quantitative and qualitative data.

7.13. ETHICAL ISSUES:

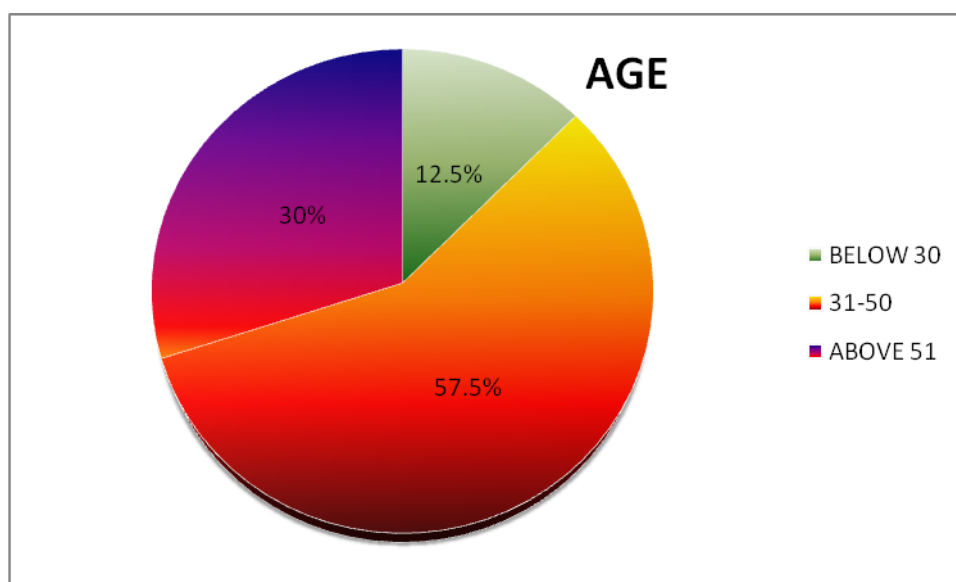
- Patients will be examined and screened unbiased and will be subjected to the criteria.
- To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments were used.
- Normal treatment procedure followed in NIS will be prescribed to the study patients. There was no infringement on the rights of patient.
- The data collected from the patient were kept confidential. The patient was informed about the diagnosis.
- Informed consent was obtained from the patient explaining in the understandable language to the patient.
- This study involves only the performing investigations and No other investigation (not mentioned in the protocol) would be done.

8. OBSERVATION AND RESULTS

8.A.UTHIRA VATHA SURONITHAM PATIENTS:

8.A.1.AGE DISTRIBUTION:

AGE	NO OF CASES	PERCENTAGE
BELOW 30	5	12.5%
31-50	23	57.5%
ABOVE 51	12	30%
TOTAL	40	100%



OBSERVATION:

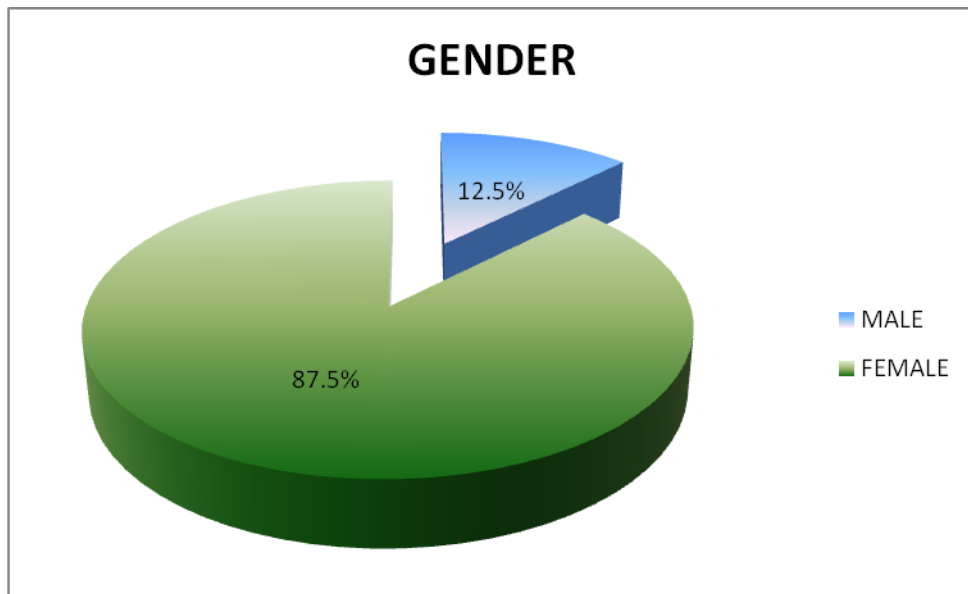
Among 40 cases, 57.5% of cases came under 31-50 yrs, 30% of cases came under above 51 and 12.5 % of cases came under below 30 yrs.

INFERENCE:

Majority of cases affected (57.5%) in the study were of 31-50 yrs (Pitha kalam).

8.A.2. GENDER:

GENDER	NO OF CASES	PERCENTAGE
MALE	5	12.5%
FEMALE	35	87.5%
TOTAL	40	100%



OBSERVATION:

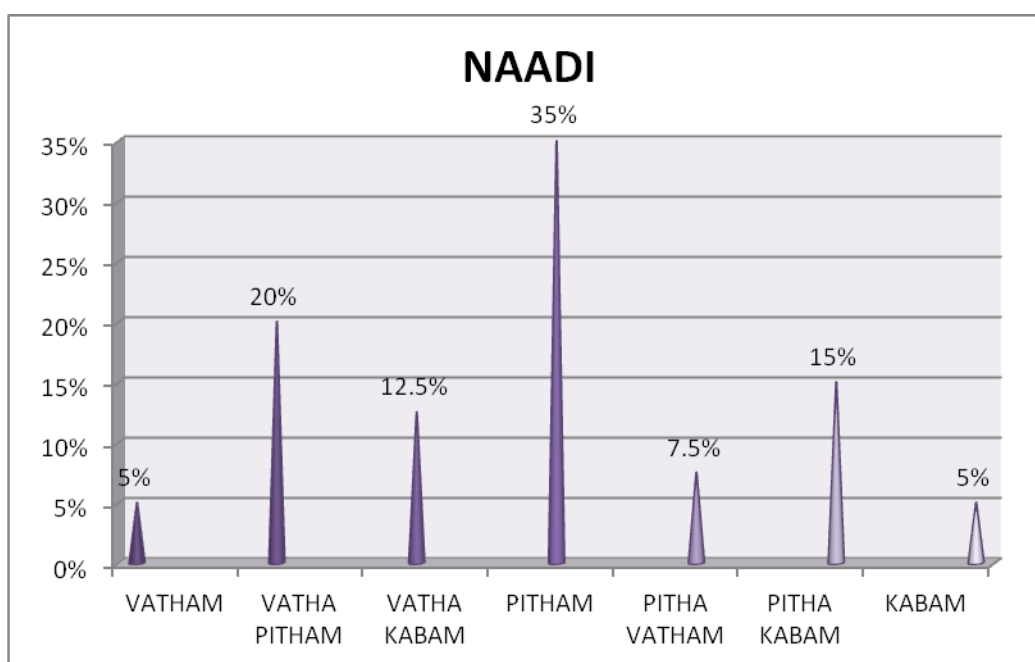
Among 40 cases, 87.5% of cases were Females, 12.5% of cases were males.

InferEnce:

In the study Females(87.5%) are more affected than Males.

8.A.3.NAADI (PULSE):

NAADI	NO OF CASES	PERCENTAGE
VATHAM	2	5%
VATHA PITHAM	8	20%
VATHA KABAM	5	12.5%
PITHAM	14	35%
PITHA VATHAM	3	7.5%
PITHA KABAM	6	15%
KABAM	2	5%
TOTAL	40	100%



OBSERVATION:

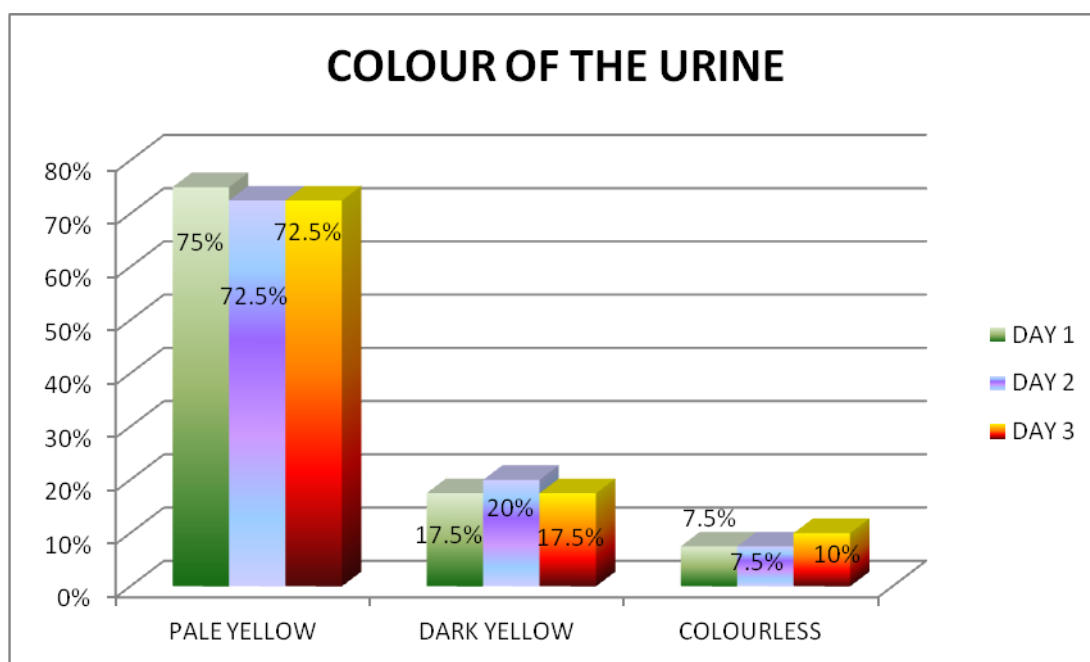
Among 40 cases, 35% of cases had the Naadinadai of Pitham, 20% cases had Vatha pitham, 15% of cases had Pitha kabam, 12.5% of cases had the Naadi nadi of Vatha pitham, 7.5% of cases had Pitha vatham

INFERENCE:

Many of the cases had Pitham and Vathapitham ,

8.A.4.COLOUR OF URINE:

COLOUR OF URINE	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
PALE YELLOW	30	75%	29	72.5%	29	72.5%
DARK YELLOW	7	17.5%	8	20%	7	17.5%
COLOURLESS	3	7.5%	3	7.5%	4	10%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

FIRST DAY:

Among 40 cases, the colours of the urine were 7.5% colourless urine, 75% Pale yellow colour urine and 17.5% Dark yellow colour urine.

SECOND DAY:

Among 40 cases, the colours of the urine were 7.5% colourless urine, 72.5% Pale yellow colour urine and 20% Dark yellow colour urine.

THIRD DAY:

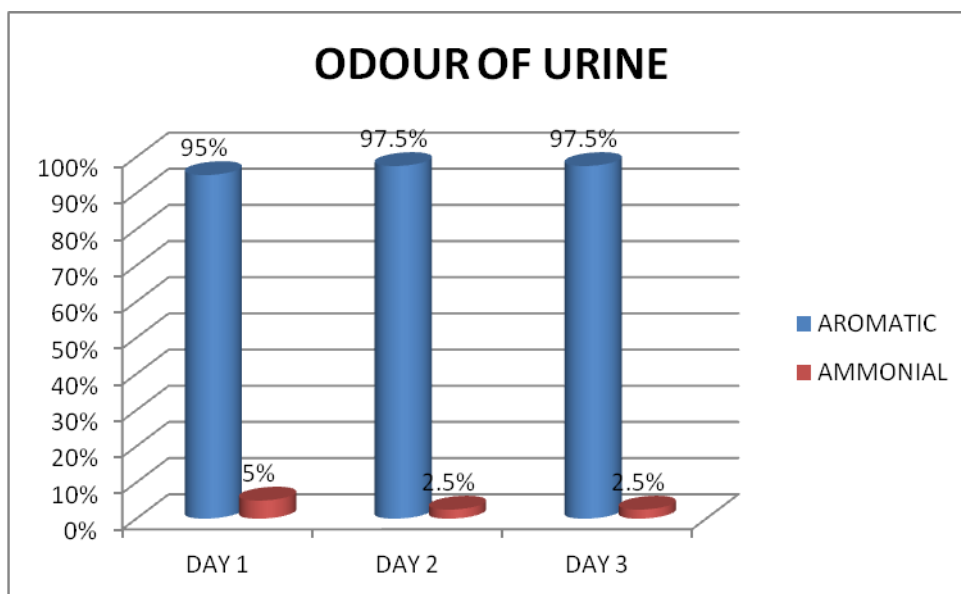
Among 40 cases, the colours of the urine were 10% colourless urine, 72.5% Pale yellow colour urine and 17.5% Dark yellow colour urine.

INFERENCE:

In many of the cases, the colour of the urine observed were Pale yellow colour in three days. The colours obtained were normal.

8.A.5. ODOUR OF URINE:

ODOUR	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
AROMATIC	38	95%	39	97.5%	39	97.5%
AMMONIACAL	2	5%	1	2.5%	1	2.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

FIRST DAY

Among 40 cases, 95% of cases had aromatic odour in urine and remaining 5% of cases had Ammoniacal odour.

SECOND DAY

Among 40 cases, 97.5% of cases had aromatic odour in urine and remaining 2.5% of cases had Ammoniacal odour.

THIRD DAY

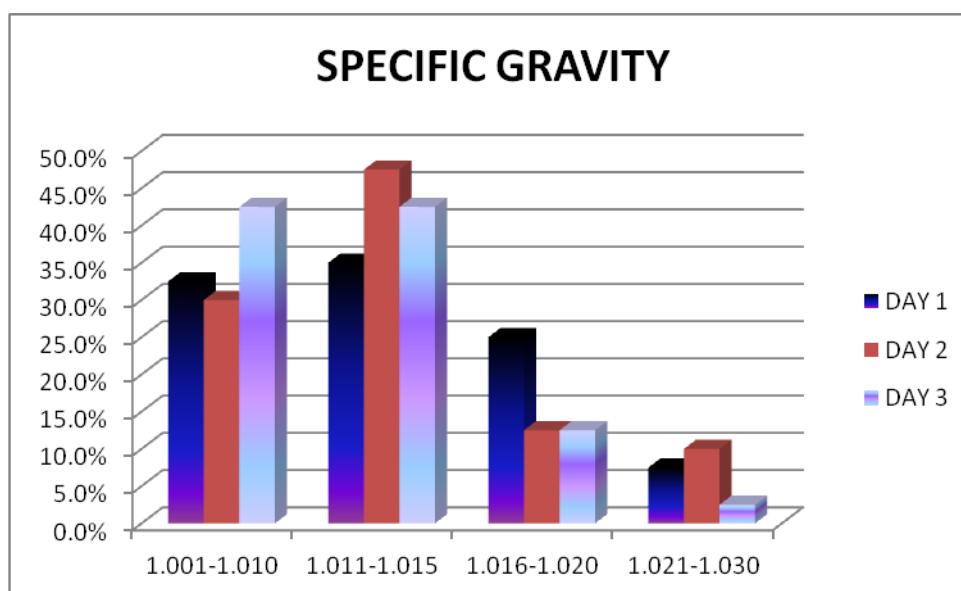
Among 40 cases, 97.5% of cases had aromatic odour in urine and remaining 2.5% of cases had Ammoniacal odour.

INFERENCE:

In many of the cases, the odour of the urine observed were aromatic odour in three days. The odour obtained was normal.

8.A.6.SPECIFIC GRAVITY:

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
1.001-1.010	13	32.5%	12	30.0%	17	42.5%
1.011-1.015	14	35%	19	47.5%	17	42.5%
1.016-1.020	10	25%	5	12.5%	5	12.5%
1.021-1.030	3	7.5%	4	10%	1	2.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

FIRST DAY

Among 40 cases, 32.5% of cases had specific gravity between 1.001-1.010, 35% of cases had specific gravity between 1.011-1.015, 25% of cases had specific gravity between 1.016-1.020 and 7.5% of cases had specific gravity between 1.021-1.030.

SECOND DAY

Among 40 cases, 32.5% of cases had specific gravity between 1.001-1.010, 35% of cases had specific gravity between 1.011-1.015, 25% of cases had specific gravity between 1.016-1.020 and 7.5% of cases had specific gravity between 1.021-1.030 .

THIRD DAY

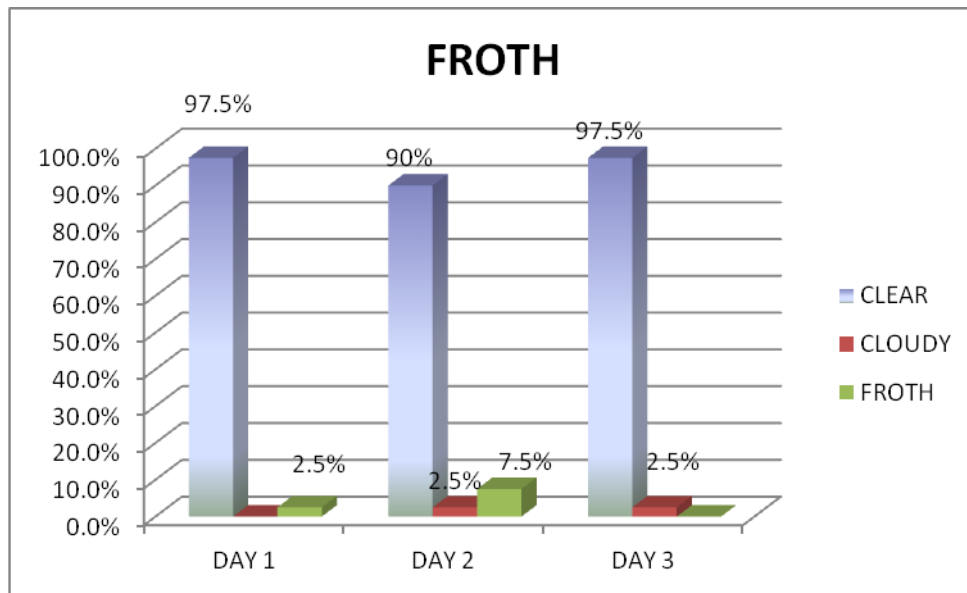
Among 40 cases, 42.5% of cases had specific gravity between 1.001-1.010, 42.5% of cases had specific gravity between 1.011-1.015, 12.5% of cases had specific gravity between 1.016-1.020 and 2.5% of cases had specific gravity between 1.021- 1.030 .

INFERENCE:

In many of the cases, the specific gravity of the urine observed was 1.010 – 1.020 in three days. The result obtained was normal.

8.A.7.FROTH:

FROTH	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
CLEAR	39	97.5%	36	90%	39	97.5%
CLOUDY	0	0%	1	2.5%	1	2.5%
FROTH	1	2.5%	3	7.5%	0	0%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

FIRST DAY

Among 40 cases the froth of the urine is absent in 97.5% and remaining 2.5% of urine had froth.

SECOND DAY

Among 40 cases the froth of the urine is absent in 90% , 7.5% of urine had froth and 2.5% of urine had cloudy.

THIRD DAY

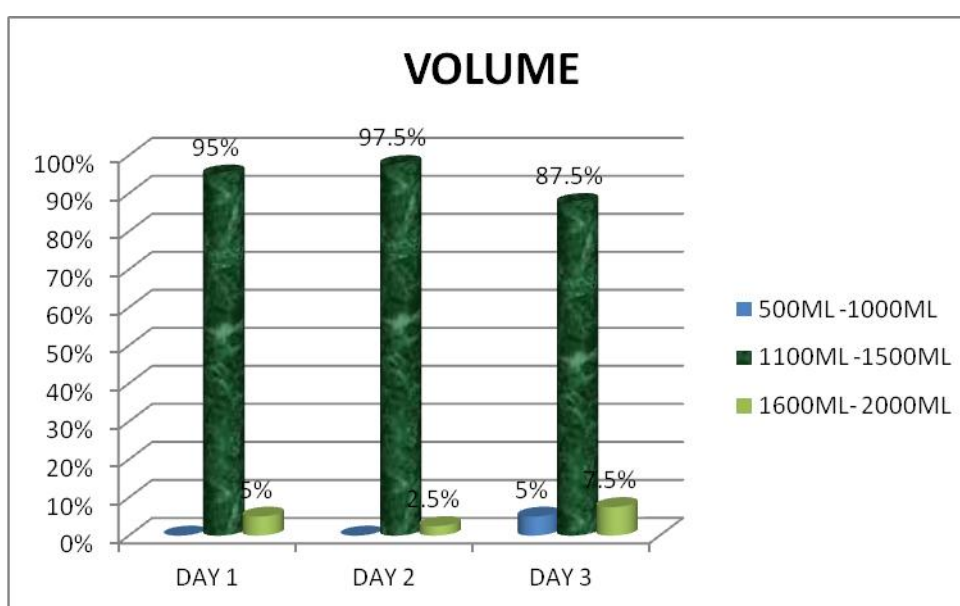
Among 40 cases the froth of the urine is absent in 97.5% and 2.5% of urine had cloudy.

INFERENCE:

In most of the cases, the froth is absent in the urine. The result which is obtained was normal.

8.A.8.VOLUME OF URINE

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
500ML -1000ML	0	0%	0	0%	2	5%
1100ML -1500ML	38	95%	39	97.5%	35	87.5%
1600ML- 2000ML	2	5%	1	2.5%	3	7.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

FIRST DAY:

Among 40 cases 95% of cases passed 1100ml -1500ml per day and remaining 5% of cases passed 1600ml- 2000ml per day.

SECOND DAY:

Among 40 cases 97.5% of cases passed 1100ml -1500ml per day and remaining 2.5% of cases passed 1600ml- 2000ml per day

THIRD DAY:

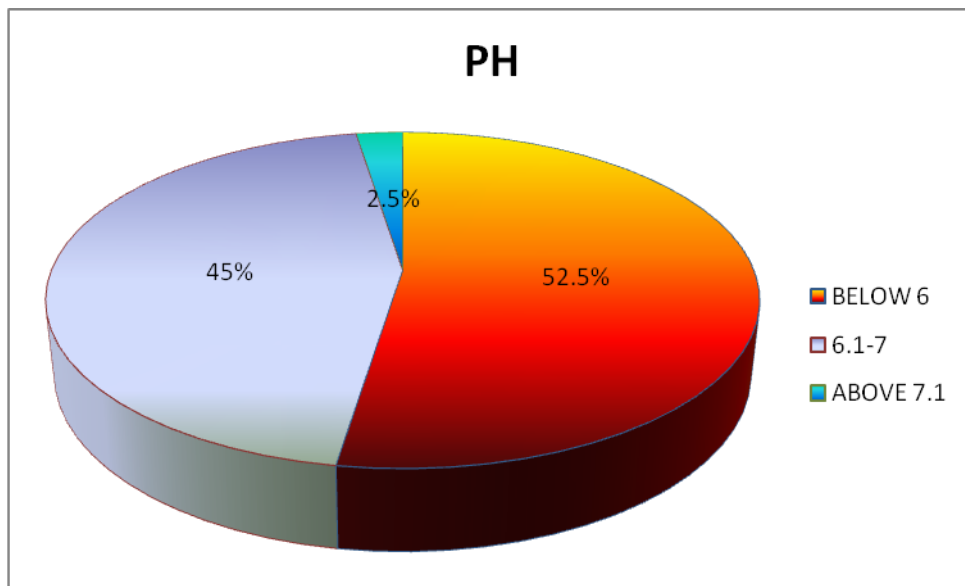
Among 40 cases 5% of cases passed 500ml -1000ml of urine per day, 87.5% of cases passed 1100ml -1500ml per day and remaining 7.5% of cases passed 1600ml- 2000ml per day

INFERENCE:

In most of the cases, the volume of the urine passed per day was 1100ml - 1500ml. The result which is obtained was normal.

8.A.9.DIFFERENT RANGE OF PH:

	PH	
	NO OF CASES	PERCENTAGE
BELOW 6	21	52.5%
6.1-7	18	45.0%
ABOVE 7.1	1	2.5%
TOTAL	40	100%



OBSERVATION:

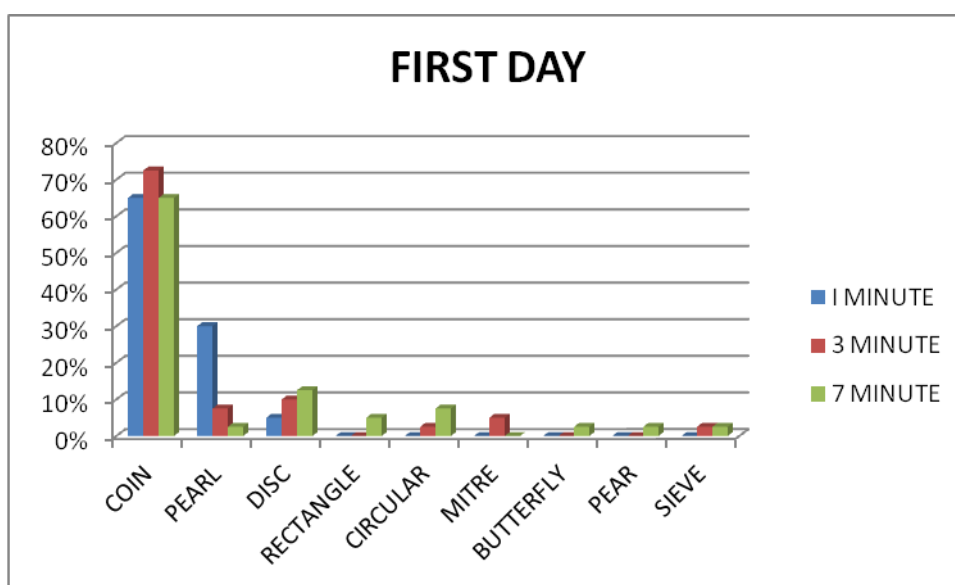
Among 40 cases , 52.5% of cases had PH below 6, 45% of cases had PH between 6.1-7 and remaining 2.5% of cases had PH above 7.

INFERENCE:

In most of the cases, the PH values of the urine observed were between 5.1- 6. The result which obtained was normal.

8.A.10.DIFFERENT PATTERNS OF NEIKKURI: FIRST DAY

	FIRST MINUTE		THIRD MINUTE		SEVENTH MINUTE	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE	NO.OF CASES	PERCENTAGE
COIN	26	65%	29	72.5%	26	65%
PEARL	12	30%	3	7.5%	1	2.5%
DISC	2	5%	4	10%	5	12.5%
RECTANGLE	0	0%	0	0%	2	5%
CIRCULAR	0	0%	1	2.5%	3	7.5%
MITRE	0	0%	2	5%	0	0%
BUTTERFLY	0	0%	0	0%	1	2.5%
PEAR	0	0%	0	0%	1	2.5%
SIEVE	0	0%	1	2.5%	1	2.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

Among 40 cases, in 65% of cases the shape of the Neikkuri in first minute was coin shape, 30 % of cases had pearl and 5% of cases had disc.

In third minute observation, 72.5% of cases had coin shape, 7.5 % of cases had pearl, 10% of cases had disc , 5% of cases had mitre, 2.5% of cases had circular and sieve.

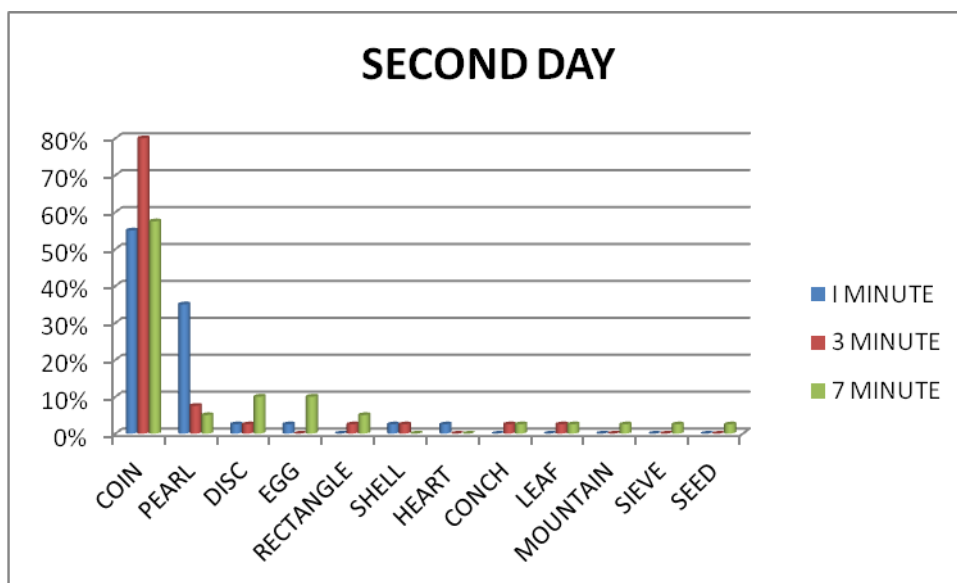
In seventh minute observation, 65% of cases had coin shape, 2.5 % of cases had pearl , 12.5% of cases had disc, 5% of cases had rectangle, 7.5% of cases had circular, 2.5% of cases had butterfly, pear and sieve.

INFERENCE:

In many of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin and pearl shapes.

8.A.11.DIFFERENT PATTERNS OF NEIKKURI: SECOND DAY

	FIRST MINUTE		THIRD MINUTE		SEVENTH MINUTE	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
COIN	22	55%	32	80%	23	57.5%
PEARL	14	35%	3	7.5%	2	5%
DISC	1	2.5%	1	2.5%	4	10%
EGG	1	2.5%	0	0%	4	10%
RECTANGLE	0	0%	1	2.5%	2	5%
SHELL	1	2.5%	1	2.5%	0	0%
HEART	1	2.5%	0	0%	0	0%
CONCH	0	0%	1	2.5%	1	2.5%
LEAF	0	0%	1	2.5%	1	2.5%
MOUNTAIN	0	0%	0	0%	1	2.5%
SIEVE	0	0%	0	0%	1	2.5%
SEED	0	0%	0	0%	1	2.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

Among 40 cases, in 55% of cases the shape of the Neikkuri in first minute was coin shape, 35 % of cases had pearl, 2.5% of cases had disc, egg, shell, heart.

In third minutes observation, 80% of cases had coin shape, 7.5 % of cases had pearl , 2.5% of cases had disc, rectangle, shell, conch and leaf.

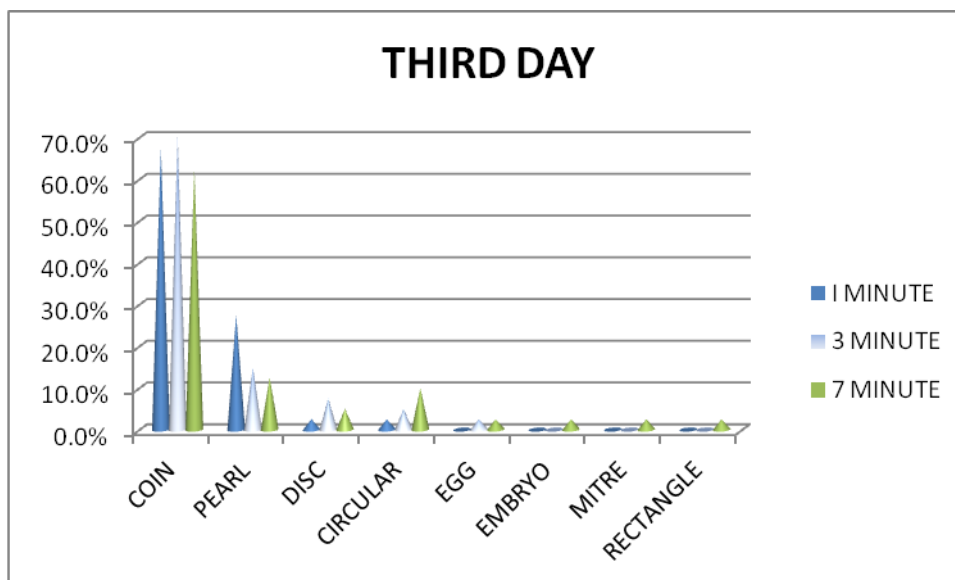
In seventh minute observation, 57.5% of cases had coin shape, 5 % of cases had pearl , 10% of cases had disc and egg, 5% of cases had rectangle, 2.5% of cases had conch, leaf, mountain, sieve and seed.

INFERENCE:

In most of the cases, the shape of the Neikkuri observed in first minute, third minutes and seventh minute were of coin and pearl shapes.

8.A.12.DIFFERENT PATTERNS OF NEIKKURI: THIRD DAY

DAY 3	FIRST MINUTE		THIRD MINUTE		SEVENTH MINUTE	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
COIN	27	67.5%	28	70%	25	62.5%
PEARL	11	27.5%	6	15%	5	12.5%
DISC	1	2.5%	3	7.5%	2	5%
CIRCULAR	1	2.5%	2	5%	4	10%
EGG	0	0%	1	2.5%	1	2.5%
EMBRYO	0	0%	0	0%	1	2.5%
MITRE	0	0%	0	0%	1	2.5%
RECTANGLE	0	0%	0	0%	1	2.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

Among 40 cases, in 67.5% of cases the shape of the Neikkuri in first minute was coin shape, 27.5 % of cases had pearl, 2.5% of cases had disc and circular.

In third minute observation, 70% of cases had coin shape, 15 % of cases had pearl , 7.5% of cases had disc,5% of cases had circular and 2.5% of cases had egg.

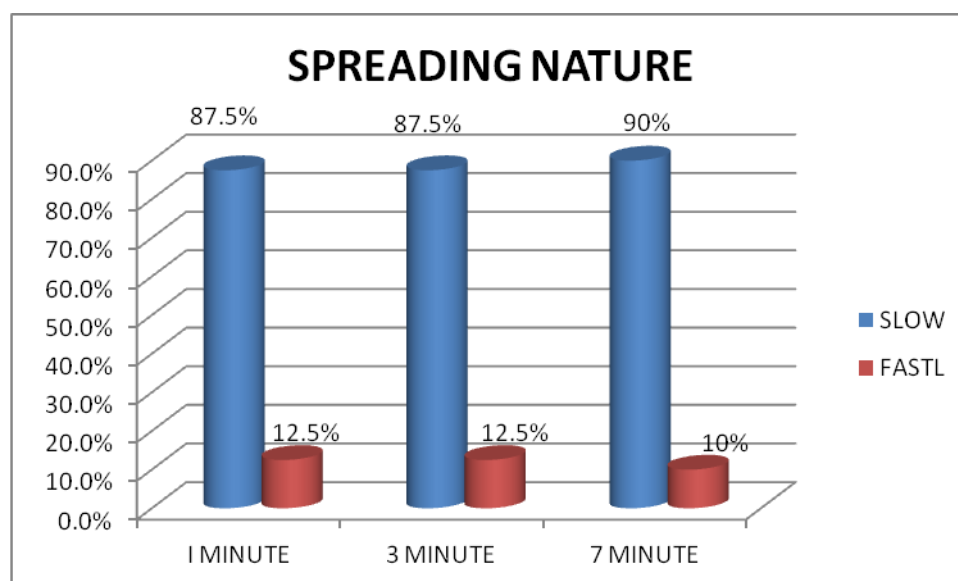
In seventh minute observation, 62.5% of cases had coin shape, 12.5 % of cases had pearl , 5% of cases had disc, 10% of cases had circular, 2.5% of cases had egg, embryo, mitre .

INFERENCE:

In most of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin and pearl shapes.

8.A.13.DISSEMINATION DYNAMICS OF OIL DROP:

SPREADING	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
SLOW	35	87.5%	35	87.5%	36	90%
FAST	5	12.5%	5	12.5%	4	10%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

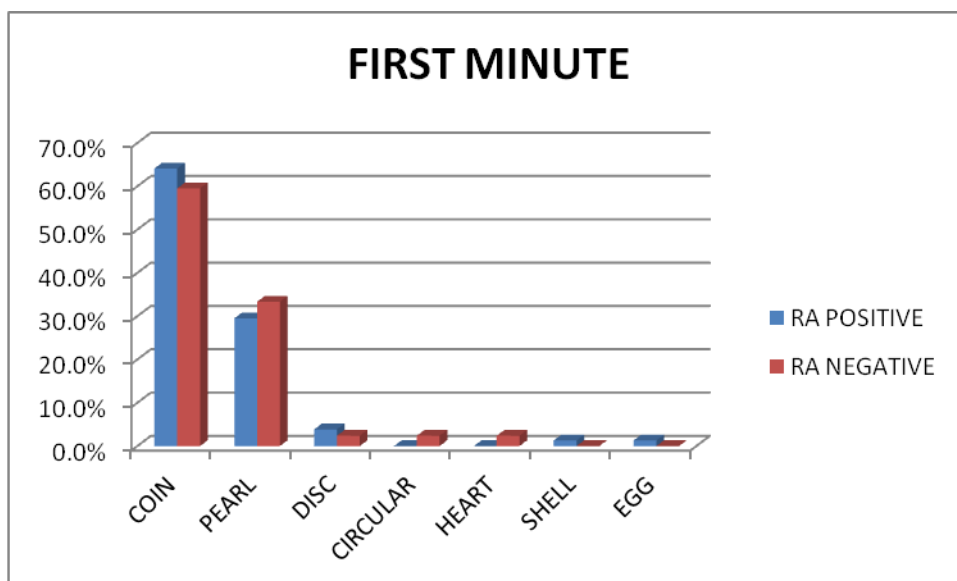
Among 40 cases, the spreading nature of the urine in the first day, 87.5% had slow spreading and 12.5% had fast spreading. In the second day, 87.5% had slow spreading, and 12.5% had fast spreading. In the third day, 90% had slow spreading, and 10% had fast spreading.

INFERENCE:

In most of the cases the dissemination dynamics of oil drop observed were slowly spreading. It indicates good prognosis.

8.A.14.NEIKKURI SHAPE ACCORDING TO RA FACTOR – FIRST MINUTE:

FIRST MINUTE	RA POSITIVE		RA NEGATIVE	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
COIN	50	64.1%	25	59.5%
PEARL	23	29.5%	14	33.3%
DISC	3	3.8%	1	2.4%
CIRCULAR	0	0%	1	2.4%
HEART	0	0%	1	2.4%
SHELL	1	1.3%	0	0%
EGG	1	1.3%	0	0%
	78	100%	42	100.0%



OBSERVATION:

In the first minute , the shape of the Neikkuri in the RA POSITIVE patients, 64.1% of cases had coin shape, 29.5% of cases had pearl shape, 3.8% of cases had disc shape, 1.3% of cases had shell and egg shape

In the RA NEGATIVE patients, 59.5% of cases had coin shape, 33.3% of cases had pearl shape, 2.4% of cases had disc, circular and heart shape.

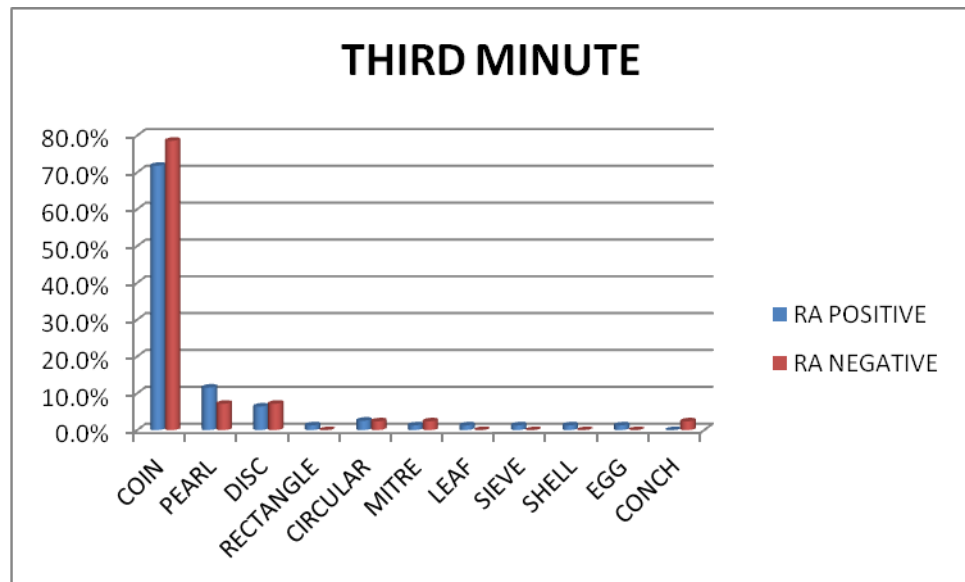
INFERENCE:

The shape of the Neikkuri in first minute is equally observed in RA POSITIVE and NEGATIVE patients.

8.A.15. NEIKKURI SHAPE ACCORDING TO RA FACTOR – THIRD MINUTE:

THIRD MINUTE	RA POSITIVE		RA NEGATIVE	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
COIN	56	71.8%	33	78.6%
PEARL	9	11.5%	3	7.1%
DISC	5	6.4%	3	7.1%
RECTANGLE	1	1.3%	0	0.0%
CIRCULAR	2	2.6%	1	2.4%
MITRE	1	1.3%	1	2.4%
LEAF	1	1.3%	0	0%
SIEVE	1	1.3%	0	0%

SHELL	1	1.3%	0	0%
EGG	1	1.3%	0	0%
CONCH	0	0%	1	2.4%
TOTAL	78	100.0%	42	100.0%



OBSERVATION:

In the third minute, the shape of the Neikkuri in the RA POSITIVE patients, 71.8% of cases had coin shape, 11.5% of cases had pearl shape, 6.4% of cases had disc shape, 2.6% of cases had circular shape, and 1.3% of cases had rectangle and mitre, leaf, sieve, shell and egg shape

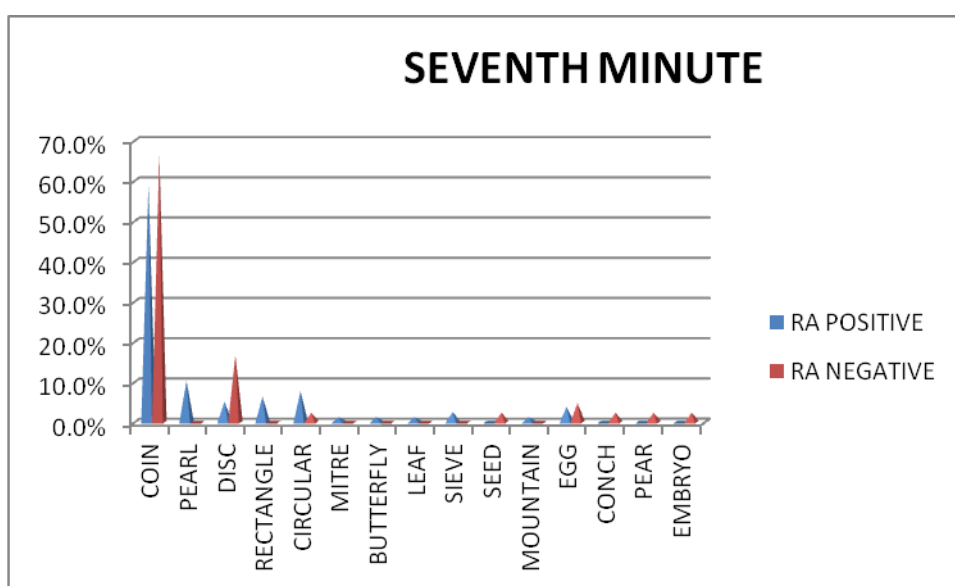
In the RA NEGATIVE patients, 78.6% of cases had coin shape, 7.1% of cases had pearl and disc shape, 2.4% of cases had circular, mitre and conch shape.

INFERENCE:

The shape of the Neikkuri in third minute is equally observed in RA POSITIVE and NEGATIVE patients.

8.A.16.NEIKKURI SHAPE ACCORDING TO RA FACTOR – SEVENTH MINUTE:

SEVENTH MINUTE	RA POSITIVE		RA NEGATIVE	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
COIN	46	59.0%	28	66.7%
PEARL	8	10.3%	0	0%
DISC	4	5.1%	7	16.7%
RECTANGLE	5	6.4%	0	0.0%
CIRCULAR	6	7.7%	1	2.4%
MITRE	1	1.3%	0	0%
BUTTERFLY	1	1.3%	0	0%
LEAF	1	1.3%	0	0%
SIEVE	2	2.6%	0	0%
SEED	0	0%	1	2.4%
MOUNTAIN	1	1.3%	0	0%
EGG	3	3.8%	2	4.8%
CONCH	0	0%	1	2.4%
PEAR	0	0%	1	2.4%
EMBRYO	0	0%	1	2.4%
TOTAL	78	100%	42	100.0%



OBSERVATION:

In the seventh minute, the shape of the Neikkuri in the RA POSITIVE patients, 59% of cases had coin shape, 10.3% of cases had pearl shape, 5.1% of cases had disc shape, 7.7% of cases had circular shape, 6.4% of cases had rectangle, 1.3% of cases had mitre, butterfly, mountain and leaf shape, 2.6% of cases had sieve, 3.8% of cases had egg shape.

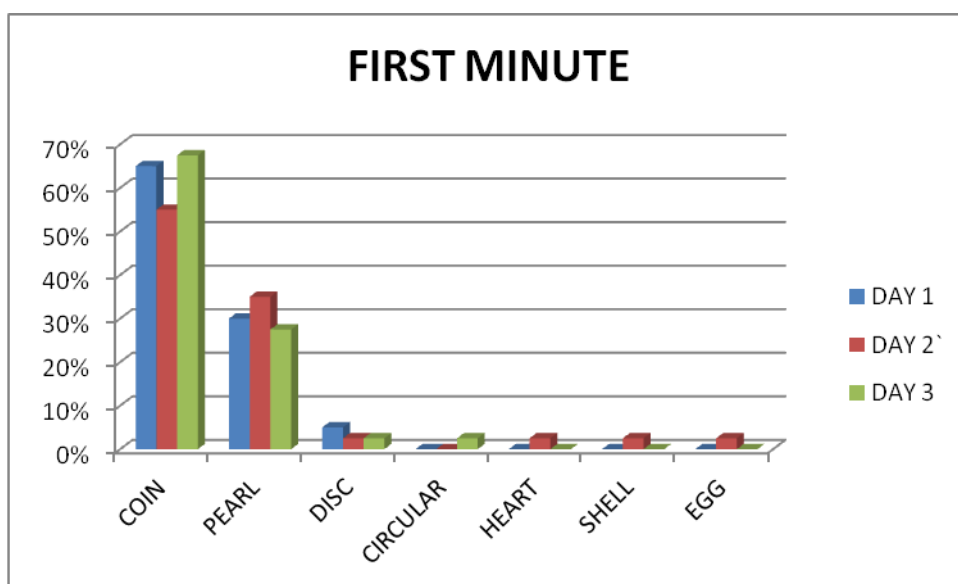
In the RA NEGATIVE patients, 66.7% of cases had coin shape, 16.7% of cases had disc shape, 2.4% of cases had circular, seed, pear, embryo and conch shape, 4.8% of cases had egg shape.

INFERENCE:

The shape of the Neikkuri in seventh minute is equally observed in RA POSITIVE and NEGATIVE patients.

8.A.17. FIRST MINUTE NEIKKURI SHAPE OF THREE CONSECUTIVE DAYS :

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO. OF CASES	PERCENTAGE	NO.OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
COIN	26	65%	22	55%	27	67.5%
PEARL	12	30%	14	35%	11	27.5%
DISC	2	5%	1	2.5%	1	2.5%
CIRCULAR	0	0%	0	0%	1	2.5%
HEART	0	0%	1	2.5%	0	0%
SHELL	0	0%	1	2.5%	0	0%
EGG	0	0%	1	2.5%	0	0%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

In the first minute, the shape of the Neikkuri in the first day, 65% of cases had coin shape, 30% of cases had pearl shape, 5% of cases had disc shape,

In the second day, 55% of cases had coin shape, 35% of cases had pearl shape, 2.5% of cases had disc, heart, shell and egg shape.

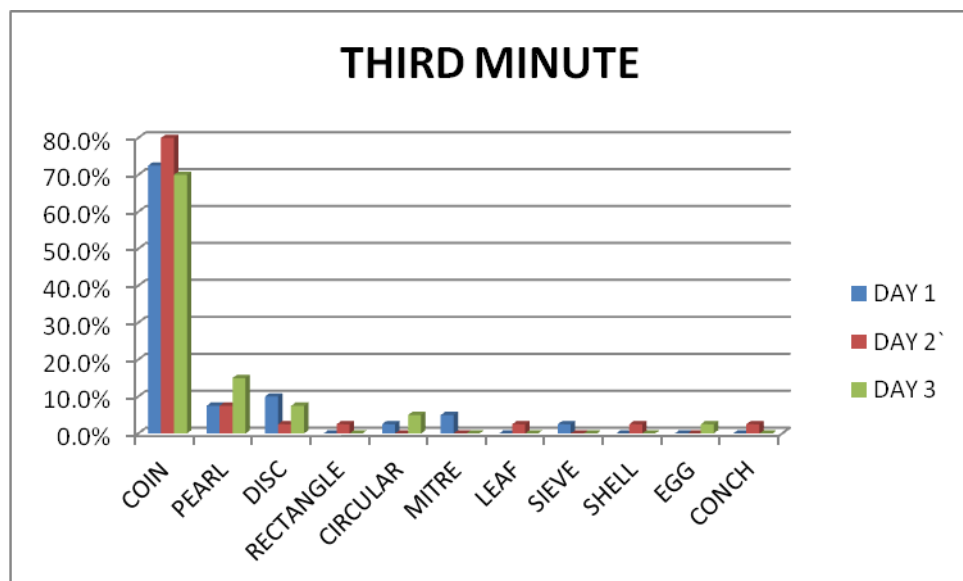
In the third day, 67.5% of cases had coin shape, 27.5% of cases had pearl shape, 2.5% of cases had disc and circular shape.

INFERENCE:

The shapes of Neikkuri were observed to be the same on all the three consecutive days.

8.A.18. THIRD MINUTE NEIKKURI SHAPE OF THREE CONSCECUTIVE DAYS :

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
COIN	29	72.5%	32	80%	28	70%
PEARL	3	7.5%	3	7.5%	6	15%
DISC	4	10%	1	2.5%	3	7.5%
RECTANGLE	0	0%	1	2.5%	0	0%
CIRCULAR	1	2.5%	0	0%	2	5%
MITRE	2	5.0%	0	0%	0	0%
LEAF	0	0%	1	2.5%	0	0%
SIEVE	1	2.5%	0	0.0%	0	0%
SHELL	0	0%	1	2.5%	0	0%
EGG	0	0%	0	0%	1	2.5%
CONCH	0	0%	1	2.5%	0	0%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

In the third minute, the shape of the Neikkuri in the first day, 72.5% of cases had coin shape, 7.5% of cases had pearl shape, 10% of cases had disc shape, 5% of cases had mitre shape, 2.5% circular and sieve shape.

In the second day, 80% of cases had coin shape, 7.5% of cases had pearl shape, 2.5% of cases had disc, rectangle, leaf and shell shape.

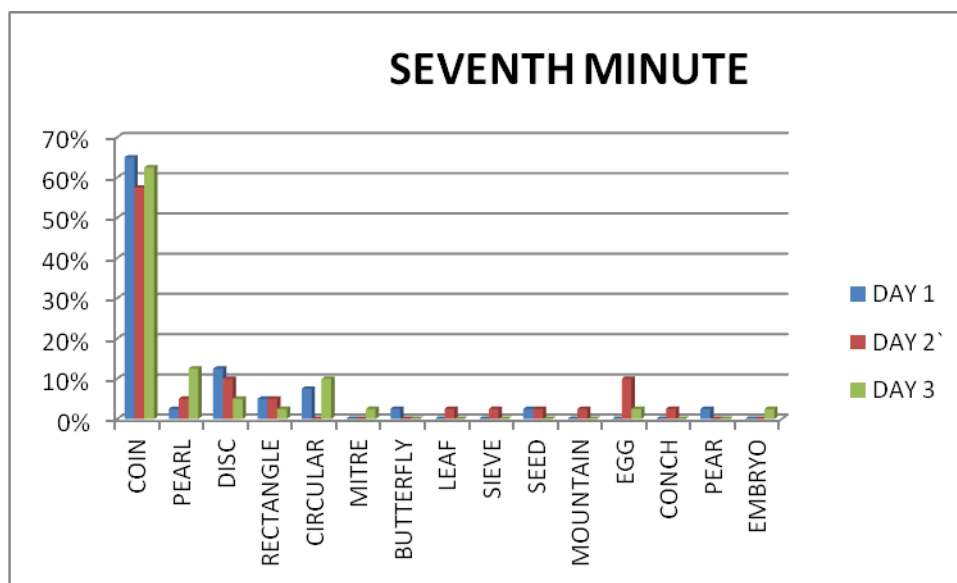
In the third day , 70% of cases had coin shape, 15% of cases had pearl shape, 7.5% of cases had disc , 5%of cases had circular shape and 2.5% of cases had egg shape.

INFERENCE:

The shapes of Neikkuri were observed to be the same on all the three consecutive days.

8.A.19. SEVENTH MINUTE NEIKKURI SHAPE OF THREE CONSCUTIVE DAYS :

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
COIN	26	65%	23	57.5%	25	62.5%
PEARL	1	2.5%	2	5.0%	5	12.5%
DISC	5	12.5%	4	10.0%	2	5.0%
RECTANGLE	2	5.0%	2	5.0%	1	2.5%
CIRCULAR	3	7.5%	0	0%	4	10.0%
MITRE	0	0%	0	0%	1	2.5%
BUTTERFLY	1	2.5%	0	0%	0	0%
LEAF	0	0%	1	2.5%	0	0%
SIEVE	0	0%	1	2.5%	0	0%
SEED	1	2.5%	1	2.5%	0	0%
MOUNTAIN	0	0%	1	2.5%	0	0%
EGG	0	0%	4	10.0%	1	2.5%
CONCH	0	0%	1	2.5%	0	0%
PEAR	1	2.5%	0	0%	0	0%
EMBRYO	0	0%	0	0%	1	2.5%
TOTAL	40	100%	40	100%	40	100%



OBSERVATION:

In the seventh minute, the shape of the Neikkuri in the first day, 65% of cases had coin shape, 2.5% of cases had pearl shape, 12.5% of cases had disc shape, 5% of cases had rectangle shape, 7.5% circular shape, 2.5% of cases had butterfly, seed and pear shape.

In the second day, 57.5% of cases had coin shape, 5% of cases had pearl shape, 10% of cases had disc and egg shape, 5% of cases had rectangle, 2.5% of cases had leaf, sieve, seed and conch shape.

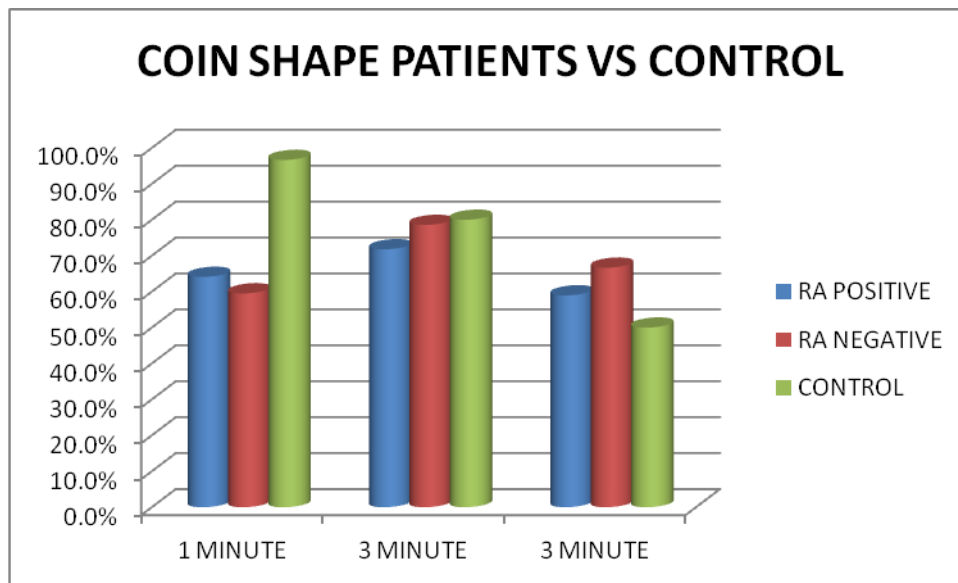
In the third day, 62.5% of cases had coin shape, 12.5% of cases had pearl shape, 5% of cases had disc, 10% of cases had circular shape and 2.5% of cases had egg, rectangle, mitre and embryo shape.

INFERENCE:

The shapes of Neikkuri were observed to be the same on all the three consecutive days.

8.A.20. COIN SHAPE PATIENTS VS CONTROL:

COIN SHAPE	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE
RA POSITIVE	64.1%	71.8%	71.8%
RA NEGATIVE	59.5%	78.6%	78.6%
CONTROL	96.7%	80%	50%



OBSERVATION:

In the RA POSITIVE patients, the shape of the Neikkuri in the first minute, 64.1 % of cases had coin shape, 71.8% of cases had coin shape in third minute, and 59% of cases had coin shape in seventh minute.

In the RA NEGATIVE patients, 59.5% of cases had coin shape in the first minute, 78.6% of cases had coin shape in third minute, and 66.7% of cases had coin shape in seventh minute.

In the healthy volunteers, 96.7% of cases had coin shape in the first minute, 80% of cases had coin shape in third minute, and 50% of cases had coin shape in seventh minute.

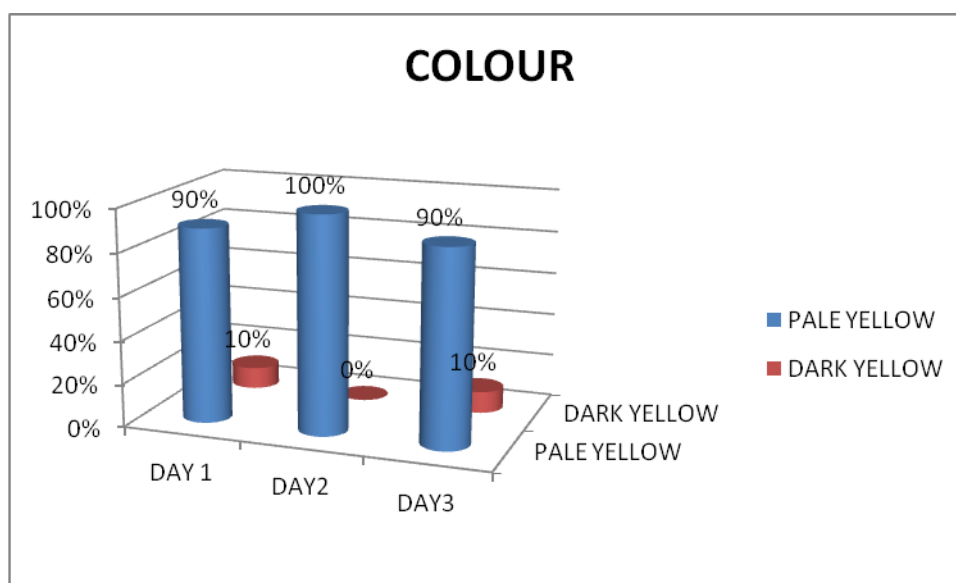
INFERENCE:

The coin shaped of the Neikkuri in all minutes is equally observed in RA POSITIVE, NEGATIVE patients and healthy volunteers.

8.B.HEALTHY VOLUNTEERS

8.B.1.COLOUR OF URINE:

COLOUR	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
PALE YELLOW	9	90%	10	100%	9	90%
DARK YELLOW	1	10%	0	0%	1	10%
TOTAL	10	100%	10	100%	10	100%



OBSERVATION:

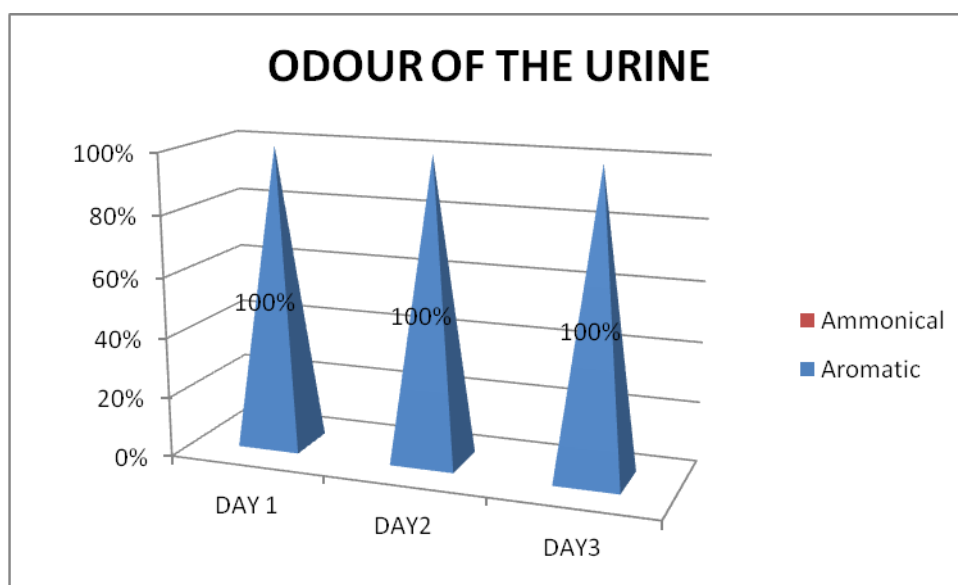
Among 10 cases, the colour of the urine had 90% pale yellow colour , 10% of cases had dark yellow colour in first day and third day. 100% of cases had pale yellow colour.

INFERENCE:

In many of the cases, the colour of the urine observed was pale yellow colour.

8.B.2.ODOUR OF URINE:

ODOUR	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
Aromatic	10	100%	10	100%	10	100%
Ammoniacal	0	0%	0	0%	0	0%
Total	10	100%	10	100%	10	100%

**OBSERVATION:**

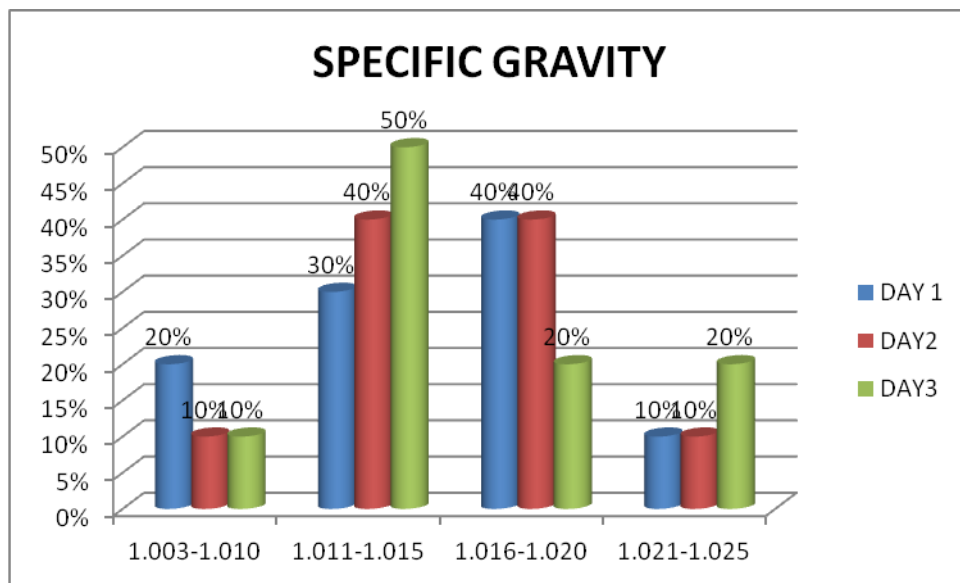
Among 10 cases, the odour of the urine 100% had aromatic odour in three days.

INFERENCE:

In all of the cases, the odour of the urine observed was of aromatic odour. The odour obtained was normal.

8.B.3.SPECIFIC GRAVITY:

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO.. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE	NO. OF CASES	PERCENTAGE
1.003-1.010	2	20%	1	10%	1	10%
1.011-1.015	3	30%	4	40%	5	50%
1.016-1.020	4	40%	4	40%	2	20%
1.021-1.025	1	10%	1	10%	2	20%
TOTAL	10	100%	10	100%	10	100%



OBSERVATION:

Among 10 cases, the Specific gravity of the urine in the first day , 20% had Specific gravity between 1.003-1.010, 30% had Specific gravity between 1.011-1.015, 40% had Specific gravity between 1.015-1.020 and 10% had Specific gravity between 1.021-1.025.

Among 10 cases, the Specific gravity of the urine in the second day , 10% had Specific gravity between 1.003-1.010, 40% had Specific gravity between 1.011-1.015, 40% had Specific gravity between 1.015-1.020 and 10% had Specific gravity between 1.021-1.025.

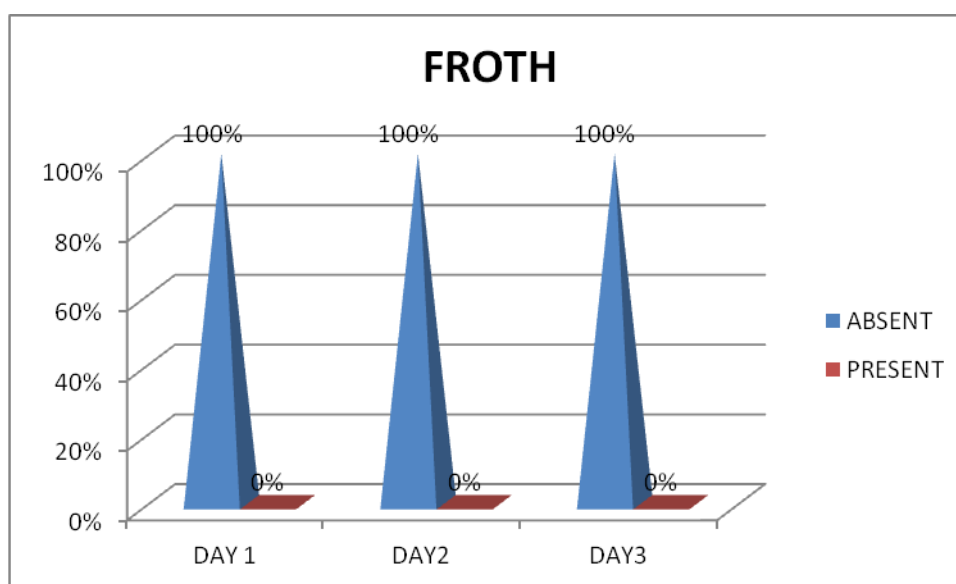
Among 10 cases, the Specific gravity of the urine in the third day , 10% had Specific gravity between 1.003-1.010, 50% had Specific gravity between 1.011-1.015, 20% had Specific gravity between 1.015-1.020 and 20% had Specific gravity between 1.021-1.025.

INFERENCE:

In most of the cases, the Specific gravity of the urine observed were of 1.010 – 1.020. The result obtained was normal

8.B.4.FROTH:

FROTH	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
ABSENT	10	100%	10	100%	10	100%
PRESENT	0	0%	0	0%	0	0%
TOTAL	10	100%	10	100%	10	100%



OBSERVATION:

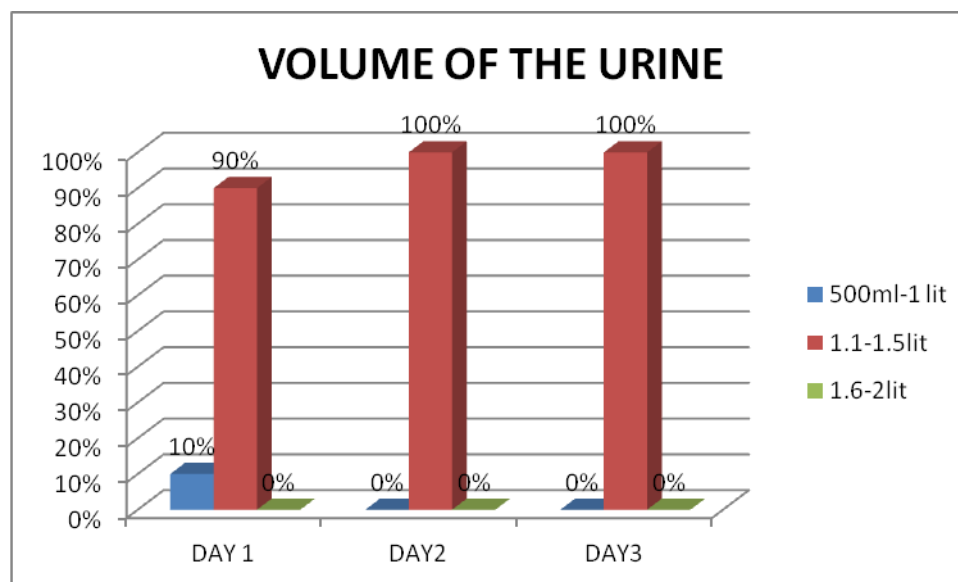
Among 10 cases the froth of the urine is absent in 100% in three days.

INFERENCE:

In most of the cases, the froth is absent in the urine. The result which is obtained was normal.

8.B.5.VOLUME OF URINE:

	FIRST DAY		SECOND DAY		THIRD DAY	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
500ML -1000ML	1	10%	0	0%	0	0%
1100ML -1500ML	9	90%	10	100%	10	100%
1600ML- 2000ML	0	0%	0	0%	0	0%
TOTAL	10	100%	10	100%	10	100%

**OBSERVATION:**

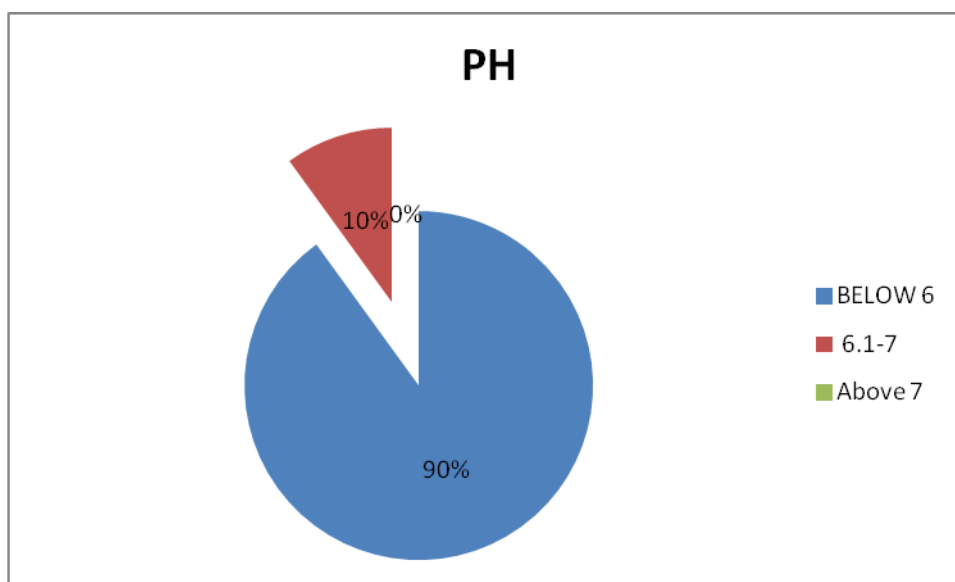
Among 10 cases 90% of cases passed 1100ml -1500ml per day , 10% of cases passed 500ml-1000ml in first day.100% of cases passed 1100ml -1500ml in the second and third day. .

INFERENCE:

In all of the cases, the volumes of the urine passed per day were 1100ml - 1500ml.

8.B.6.PH VALUE:

PH	NO OF CASES	PERCENTAGE
Below 6	9	90%
6.1-7	1	10%
Above 7	0	0%
TOTAL	10	100%

**OBSERVATION:**

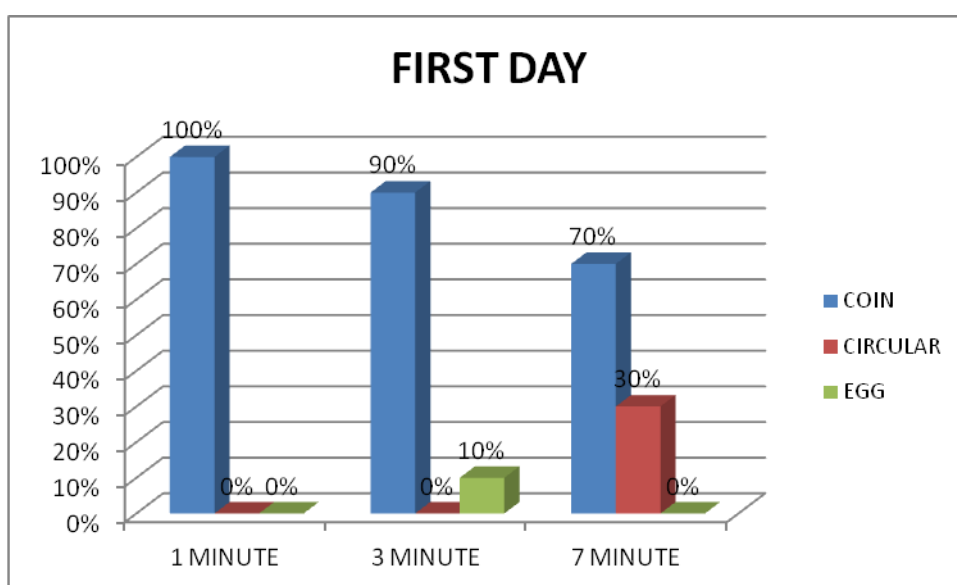
Among 10 cases, 90% of cases had PH below 6, 10% of cases had pH between 6.1-7.

INFERENCE:

In most of the cases, the PH of the urine observed was of below 6. The result which obtained was normal.

8.B.7.NEIKKURI: FIRST DAY

FIRST DAY	FIRST MINUTE		THIRD MINUTE		SEVENTH MINUTE	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
COIN	10	100%	9	90%	7	70%
CIRCULAR	0	0%	0	0%	3	30%
EGG	0	0%	1	10%	0	0%
TOTAL	10	100%	10	100%	10	100%



OBSERVATION:

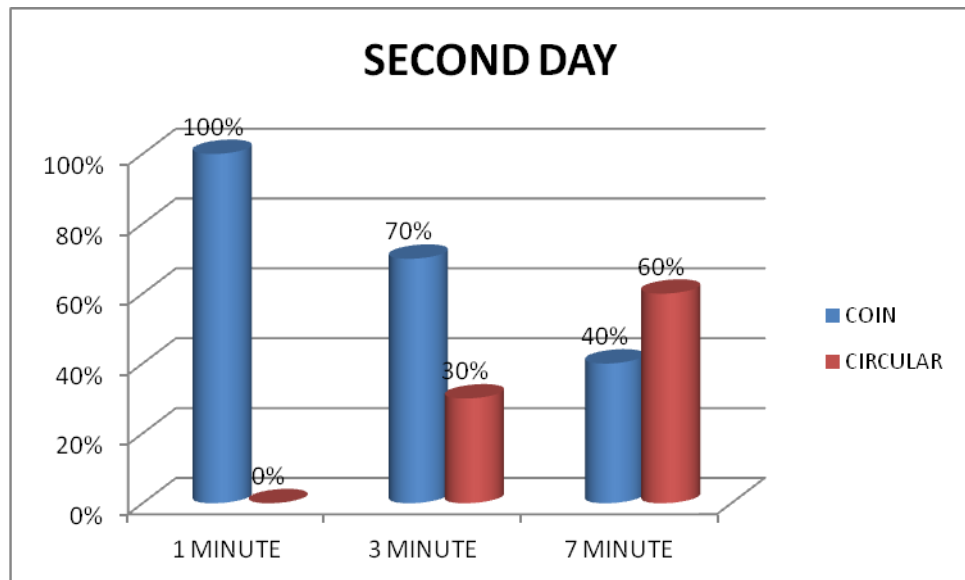
Among 10 cases, the shape of the Neikkuri in first minute, 100% of cases had coin shape. In third minute, 90% of cases had coin shape, 10% of cases had egg shape. In seventh minute, 70% of cases had coin shape, 30% of cases had circular shape

INFERENCE:

In most of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin and circular shapes.

8.B.8.NEIKKURI: SECOND DAY

SECOND DAY	FIRST MINUTE		THIRD MINUTE		SEVENTH MINUTE	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
COIN	10	100%	7	70%	4	40%
CIRCULAR	0	0%	3	30%	6	60%
TOTAL	10	100%	10	100%	10	100%



OBSERVATION:

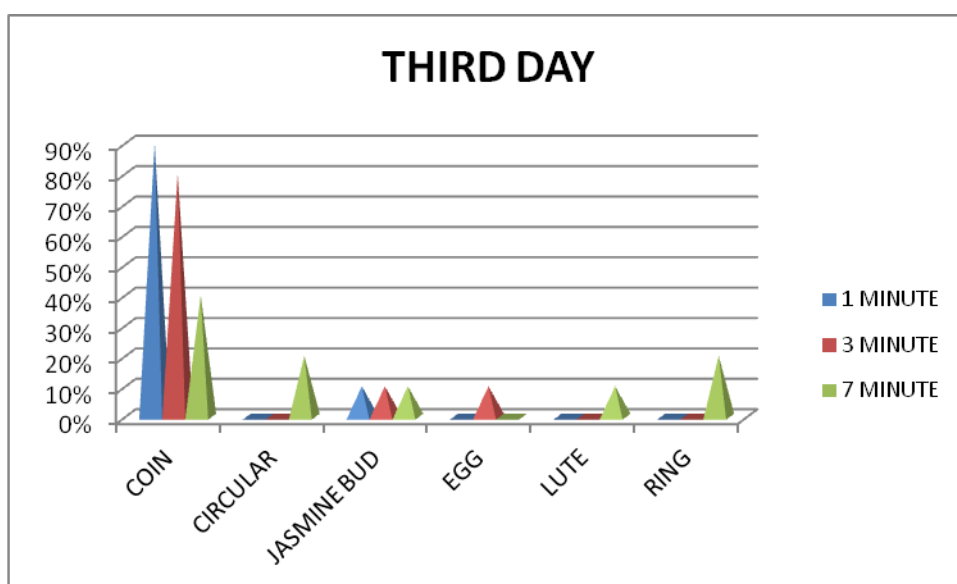
Among 10 cases, the shape of the Neikkuri in first minute, 100% of cases had coin shape. In third minute, 70% of cases had coin shape, 30% of cases had circular shape. In seventh minute, 40% of cases had coin shape, 60% of cases had circular shape

INFERENCE:

In most of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin and circular shapes.

8.B.9.NEIKKURI: THIRD DAY

THIRD DAY	FIRST MINUTE		THIRD MINUTE		SEVENTH MINUTE	
	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE	NO OF CASES	PERCENTAGE
COIN	9	90%	8	80%	4	40%
CIRCULAR	0	0%	0	0%	2	20%
JASMINE BUD	1	10%	1	10%	1	10%
EGG	0	0%	1	10%	0	0%
LUTE	0	0%	0	0%	1	10%
RING	0	0%	0	0%	2	20%
TOTAL	10	100%	10	100%	10	100%



OBSERVATION:

Among 10 cases, the shape of the Neikkuri in first minute, 90% of cases had coin shape and 10% of cases had jasmine bud shape. In third minute, 80% of cases had coin shape, 10% of cases had jasmine bud and egg shape. In seventh minute, 40% of cases had coin shape, 20% of cases had circular, ring shape, 10% of cases had jasmine bud, lute shape.

INFERENCE:

In most of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin and circular shapes.

TABLE 1 : UTHIRA VATHA SURONITHAM PATIENTS -LAB INVESTIGATIONS																	
S.NO	IP NO	AGE/SEX	HB	TRBC	TC	DC			PLT	ESR		SEROLOGY			MOTION		
						N	L	E		30	1	RA	CRP	ASO	OVA	CYST	OCCULT BLOOD
1	3832	52/F	11.4	4.1	7100	68	30	2	2.6	10	20	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
2	4879	41/M	13.8	4.1	9100	60	35	3	2.3	6	14	POSITIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
3	3931	56/F	13.2	4.6	8600	60	34	6	1.9	8	18	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
4	3924	45/F	12.1	4.7	8000	70	27	3	4.3	22	44	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
5	3849	24/F	10.1	4	9800	67	30	3	5.7	38	126	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
6	3871	57/F	12.6	4.7	5900	51	43	6	2.8	2	6	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
7	3954	52/F	10.4	4.7	5900	60	36	3	2.5	32	68	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
8	4001	47/F	11.1	3.6	7000	73	22	5	3.6	42	94	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
9	3998	52/F	12.8	5.3	5100	52	41	1	3.2	26	54	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
10	4980	40/M	12.6	4.3	9100	42	30	2	3.9	4	8	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
11	4010	40/F	12.8	4.6	7200	55	40	5	3.9	20	48	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
12	5018	23/M	15.6	5.3	10700	76	19	5	2.3	18	40	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
13	4031	50/F	11.3	3.8	6800	60	32	8	1.8	2	8	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
14	4032	60/F	12.9	4.3	5600	65	23	4	2.6	4	10	POSITIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
15	5019	42/M	16.7	5.2	8600	58	39	5	2.7	2	4	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
16	4084	42/F	12.8	4.6	9900	67	30	3	2.9	8	18	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
17	4057	56/F	10.7	4.4	5500	40	49	11	2.8	2	4	POSITIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
18	4117	29/F	11.2	4.2	8000	61	31	3	3.1	2	20	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
19	4090	49/F	12.7	4.4	9200	71	24	5	3.9	8	18	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
20	4098	36/F	11.1	4	7100	69	25	5	3.5	20	48	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT

TABLE 2 : UTHIRA VATHA SURONITHAM PATIENTS -LAB INVESTIGATIONS																	
S.NO	IP NO	AGE/SEX	HB	TRBC	TC	DC			PLT	ESR		SEROLOGY			MOTION		
						N	L	E		30	1	RA	CRP	ASO	OVA	CYST	OCCULT BLOOD
21	4081	39/F	13.5	5.1	8600	57	31	5	3.3	2	12	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
22	4136	54/F	13.7	4.6	6800	64	30	6	29	8	18	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
23	4111	39/F	14.3	4.9	7000	30	52	18	2.5	2	4	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
24	4081	35/F	11.9	4.7	7100	68	28	4	2.6	10	60	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
25	4080	33/F	9.9	3.6	9800	83	16	1	2.3	40	126	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
26	4166	25/F	11.5	4.3	10700	72	25	3	2.7	18	54	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
27	4173	46/F	11.9	4.3	6900	62	33	5	3	4	8	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
28	4183	53/F	11.9	4.4	6800	70	25	5	2.6	20	48	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
29	4098	40/F	10.8	4.3	9900	73	25	2	4.5	38	110	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
30	4179	57/F	13.7	4.4	8100	38	49	13	2.6	10	30	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
31	5118	47/M	12.4	3.9	10600	72	23	5	5.2	30	120	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
32	4249	50/F	9.2	4.9	9000	50	45	5	3.3	4	12	NEGATIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
33	4253	37/F	9	4.9	8900	74	22	4	4.2	4	10	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
34	4259	52/F	10	3.5	3100	70	24	6	3.2	5	10	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
35	4302	42/F	9	4	10100	70	26	4	2.8	4	8	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
36	4298	36/F	8.5	3.8	6500	65	27	7	2.7	30	60	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
37	4289	50/F	10	4.5	7100	60	34	6	2.6	4	10	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
38	5279	19/M	9	5.1	6300	74	21	5	3.5	8	18	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
39	4359	42/F	10.5	4.5	13600	75	20	5	3.2	22	56	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT
40	4379	52/F	8.7	4	8000	70	26	4	2.5	56	120	POSITIVE	POSITIVE	NEGATIVE	NIL	NIL	ABSENT

TABLE 3: UTHIRA VATHA SURONITHAM PATIENTS - LAB INVESTIGATIONS

S.NO	IP NO	AGE/SEX	SUGAR		CHOLESTEROL					URIC ACID	UREA	CREATININE	SGOT	SGPT	ALP	PROTEIN		
			F	PP	TOTAL	HDL	LDL	VLDL	TGL							TOTAL	ALBUMIN	GLOBIN
1	3832	52/F	88	96	189	34	129	26	129	5.9	18	0.6	18	22	167	6.7	4.4	2.3
2	4879	41/M	78	146	198	35	123	40	201	4	22	0.7	12	14	186	7.6	5.1	3.5
3	3931	56/F	94	133	163	31	131	21	108	5	17	0.5	18	20	173	7.2	4.5	2.7
4	3924	45/F	86	198	152	30	51	71	411	4.7	14	0.5	18	19	193	7	4.1	2.9
5	3849	24/F	68	127	178	28	135	52	125	5.2	14	0.5	29	30	361	6.7	4.7	2.7
6	3871	57/F	95	112	185	32	126	21	105	38	21	0.6	39	35	177	6.8	4.1	2.7
7	3954	52/F	76	104	112	30	62	26	131	5.5	15	0.6	14	15	213	6.2	3.7	2.5
8	4001	47/F	100	132	161	30	90	42	212	6	20	0.6	18	19	201	6	4	2
9	3998	52/F	92	135	192	22	52	23	116	3	15	0.5	23	43	192	7	5.2	1.8
10	4980	40/M	92	107	136	30	52	24	121	4.9	24	0.7	36	27	178	7	5	2.6
11	4010	40/F	87	106	161	30	102	36	182	5.2	16	0.5	16	18	199	7.1	3.1	3
12	5018	23/M	98	106	90	22	50	15	77	6	14	0.5	13	14	152	7	4	3
13	4031	50/F	90	125	154	34	92	23	116	4.2	14	0.5	16	18	194	6.7	3.9	2.8
14	4032	60/F	97	108	154	24	106	16	83	4.5	25	0.7	39	15	226	7	5	2
15	5019	42/M	87	101	141	30	124	14	70	4.3	14	0.4	16	17	142	5.6	3.1	2.4
16	4084	42/F	105	134	169	34	119	21	138	3	17	0.5	22	24	160	6.6	4	2.6
17	4057	56/F	107	140	162	30	110	25	128	32	20	0.6	16	17	160	7.2	5.2	2
18	4117	29/F	86	107	169	30	125	12	61	6.4	24	0.7	16	17	165	6.8	4.9	2.9
19	4090	49/F	79	134	226	45	151	36	184	52	15	0.5	11	12	136	5.5	3.1	2.4
20	4098	36/F	88	102	149	30	98	23	117	4.1	16	0.5	11	12	162	7.4	5.2	2.2

TABLE 4: UTHIRA VATHA SURONITHAM PATIENTS -LAB INVESIGATIONS																		
S.NO	IP NO	AGE/SEX	SUGAR		CHOLESTEROL					URIC ACID	UREA	CREATININE	SGOT	SGPT	ALP	PROTEIN		
			F	PP	TOTAL	HDL	LDL	VLDL	TGL							TOTAL	ALBUMIN	GLOBIN
21	4081	39/F	115	164	179	38	102	19	95	7.5	14	0.4	41	20	198	7.1	5.1	2
22	4136	54/F	100	127	180	36	121	26	132	5.3	20	0.6	13	14	145	6.3	4.1	2.2
23	4111	39/F	116	163	137	30	134	17	85	3.4	15	0.4	17	19	150	6.2	4.2	2
24	4081	35/F	102	135	189	39	110	40	135	35	14	0.5	26	15	186	7.1	4.9	2.2
25	4080	33/F	84	111	102	17	67	44	221	3	15	0.4	26	29	170	6.1	4.1	2
26	4166	25/F	94	125	105	26	52	16	80	3.7	14	0.4	15	16	160	5.1	3	2.1
27	4173	46/F	133	152	173	34	137	40	197	5	17	0.6	17	25	136	6.8	3.8	3
28	4183	53/F	93	103	117	29	64	33	165	3	14	0.6	13	15	183	5.9	3.2	2.7
29	4098	40/F	96	126	177	34	80	28	144	5	14	0.4	12	14	140	7	4	3
30	4179	57/F	84	110	145	41	78	22	110	4	26	0.6	40	25	187	7.2	4.5	2.7
31	5118	47/M	84	129	140	40	121	36	130	4.2	14	0.4	29	30	176	7.2	3.8	2.4
32	4249	50/F	102	130	200	35	82	23	115	5.7	23	0.7	14	16	168	6.6	4.3	2.3
33	4253	37/F	92	108	143	33	77	20	100	3.2	14	0.4	16	18	197	6.4	3.8	2.6
34	4259	52/F	80	104	121	28	66	32	164	3.2	14	0.4	11	13	166	5.9	3.3	2.6
35	4302	42/F	99	111	220	42	110	37	189	4.1	16	0.5	17	19	160	6	3.4	2.6
36	4298	36/F	82	132	135	25	92	18	110	3	17	0.5	17	18	125	6.5	3.5	3
37	4289	50/F	81	101	180	34	79	14	74	3.9	15	0.5	15	16	198	7.2	5.2	2
38	5279	19/M	89	121	155	31	75	22	110	3.9	15	0.5	24	26	169	6.6	3.4	3.2
39	4359	42/F	107	120	125	33	75	18	94	6.4	21	0.9	15	16	166	6	3.4	2.6
40	4379	52/F	85	103	154	35	99	20	115	4	26	0.7	15	25	172	7.2	5	2.2

TABLE 5: UTHIRA VATHA SURONITHAM PATIENTS - LAB INVESTIGATIONS

S.NO	OP/IP NO	AGE/SEX	PH	SPECIFIC GRAVITY	ALBUMIN	SUGAR	ACETONE	BILE SALT	BILE PIGMENT	UROBILINOGEN	OCCULT BLOOD	DEPOSITS	
												PUS	EPI
1	3832	52/F	5.5	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	10-15	1-2
2	4879	41/M	6.8	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-3	1-2
3	3931	56/F	5.8	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-3	2-3
4	3924	45/F	5.5	1.014	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-3
5	3849	24/F	6.9	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	3-5
6	3871	57/F	5.8	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
7	3954	52/F	5.4	1.016	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	3-6	3-6
8	4001	47/F	5.6	1.020	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	3-4	2-3
9	3998	52/F	5.5	1.030	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	3-4	4-5
10	4980	40/M	5.6	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-3	2-3
11	4010	40/F	5.4	1.020	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	1-2
12	5018	23/M	5.5	1.030	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-3	2-3
13	4031	50/F	6.7	1.020	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-6	1-3
14	4032	60/F	5.6	1.020	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	3-4
15	5019	42/M	6.5	1.014	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
16	4084	42/F	5.5	1.020	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	1-2
17	4057	56/F	5.3	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	1-2
18	4117	29/F	5.5	1.026	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-3	2-3
19	4090	49/F	6	1.006	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	3-6	4-8
20	4098	36/F	6.3	1.016	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-3

TABLE 6: UTHIRA VATHA SURONITHAM PATIENTS -LAB INVESTIGATIONS													
S.NO	OP/IP NO	AGE/SEX	PH	SPECIFIC GRAVITY	ALBUMIN	SUGAR	ACETONE	BILE SALT	BILE PIGMENT	UROBILINOGEN	OCCULT BLOOD	DEPOSITS	
												PUS	EPI
21	4081	39/F	5.6	1.016	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
22	4136	54/F	5.5	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-4
23	4111	39/F	6.3	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-4
24	4081	35/F	6.3	1.008	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
25	4080	33/F	6.9	1.008	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	4-5
26	4166	25/F	7.3	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	8-10
27	4173	46/F	6.5	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	1-2
28	4183	53/F	5.6	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-3
29	4098	40/F	6.2	1.014	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	3-4	PLENTY
30	4179	57/F	6.5	1.018	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-3	1-2
31	5118	47/M	6.6	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
32	4249	50/F	6.2	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-4
33	4253	37/F	5.7	1.008	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	8-10	8-10
34	4259	52/F	6.9	1.006	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-4
35	4302	42/F	5.8	1.008	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
36	4298	36/F	6.4	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	3-5
37	4289	50/F	6.2	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	5-10
38	5279	19/M	5.3	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-8	3-6
39	4359	42/F	6.2	1.016	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	4-6
40	4379	52/F	6.1	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	5-8

TABLE 7: UTHIRA VATHA SURONITHAM PATIENTS – NEERKKURI- FIRST DAY									
S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL		
							VOLUME	DEPOSITS(PUS,EPI CELL)	
1	3832	52/F	PALE YELLOW	1.010	AROMATIC	PRESENT	1.3L	10-15	1-2
2	4879	41/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.5L	2-3	1-2
3	3931	56/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L	2-3	2-3
4	3924	45/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.2L	1-2	2-3
5	3849	24/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L	2-4	3-5
6	3871	57/F	COLOURLESS	1.012	AROMATIC	CLEAR	1.4L	2-4	2-4
7	3954	52/F	PALE YELLOW	1.016	AMMONIAL	CLEAR	1.3L	3-6	3-6
8	4001	47/F	DARK YELLOW	1.020	AROMATIC	CLEAR	1.3L	3-4	2-3
9	3998	52/F	PALE YELLOW	1.030	AROMATIC	CLEAR	1.4L	3-4	4-5
10	4980	40/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L	2-3	2-3
11	4010	40/F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.3L	2-4	1-2
12	5018	23/M	PALE YELLOW	1.030	AROMATIC	CLEAR	1.4L	2-3	2-3
13	4031	50/F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.2L	2-6	1-3
14	4032	60/F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.3L	1-2	3-4
15	5019	42/M	PALE YELLOW	1.014	AROMATIC	CLEAR	1.6L	2-4	2-4
16	4084	42/F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.1L	1-2	1-2
17	4057	56/F	CLOURLESS	1.012	AROMATIC	CLEAR	1.3L	1-2	1-2
18	4117	29/F	DARK YELLOW	1.026	AMMONIAL	CLEAR	1.6L	2-3	2-3
19	4090	49/F	PALE YELLOW	1.006	AROMATIC	CLEAR	1.2L	3-6	4-8
20	4098	36/F	DARK YELLOW	1.016	AROMATIC	CLEAR	1.4L	1-2	2-3

TABLE 8: UTHIRA VATHA SURONITHAM PATIENTS -NEERKKURI - FIRST DAY									
S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL		
							VOLUME	DEPOSITS(PUS,EPI CELL)	
21	4081	39/F	DARK YELLOW	1.016	AROMATIC	CLEAR	1.4L	2-4	2-4
22	4136	54/F	COLOURLESS	1.012	AROMATIC	CLEAR	1.5L	1-2	2-4
23	4111	39/F	DARK YELLOW	1.012	AROMATIC	CLEAR	1.3L	1-2	2-4
24	4081	35/F	COLOURLESS	1.008	AROMATIC	CLEAR	1.4L	2-4	2-4
25	4080	33/F	PALE YELLOW	1.008	AROMATIC	CLEAR	1.2L	4-5	4-5
26	4166	25/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.4L	4-5	8-10
27	4173	46/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.4L	1-2	1-2
28	4183	53/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L	1-2	2-3
29	4098	40/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L	3-4	PLENTY
30	4179	57/F	DARK YELLOW	1.018	AROMATIC	CLEAR	1.4L	2-3	1-2
31	5118	47/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L	2-4	2-4
32	4249	50/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L	1-2	2-4
33	4253	37/F	PALE YELLOW	1.008	AROMATIC	CLEAR	1.4L	8-10	8-10
34	4259	52/F	PALE YELLOW	1.006	AROMATIC	CLEAR	1.3L	1-2	2-4
35	4302	42/F	PALE YELLOW	1.008	AROMATIC	CLEAR	1.5L	2-4	2-4
36	4298	36/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L	1-2	3-5
37	4289	50/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L	4-5	5-10
38	5279	19/M	DARK YELLOW	1.012	AROMATIC	CLEAR	1.4L	4-8	3-6
39	4359	42/F	PALE YELLOW	1.016	AROMATIC	CLEAR	1.3L	4-5	4-6
40	4379	52/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.4L	2-3	5-6

TABLE 9: UTHIRA VATHA SURONITHAM PATIENTS -NEERKKURI - SECOND DAY							
S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL
1	3832	52/F	PALE YELLOW	1.010	AROMATIC	PRESENT	1.4L
2	4879	41/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
3	3931	56/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
4	3924	45/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.2L
5	3849	24/F	PALE YELLOW	1.012	AROMATIC	CLOUDY	1.3L
6	3871	57/F	PALE YELLOW	1.012	AROMATIC	PRESENT	1.3L
7	3954	52/F	PALE YELLOW	1.020	AMMONIAL	CLEAR	1.3L
8	4001	47/F	PALE YELLOW	1.016	AROMATIC	CLEAR	1.4L
9	3998	52/F	PALE YELLOW	1.024	AROMATIC	CLEAR	1.4L
10	4980	40/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L
11	4010	40/F	DARK YELLOW	1.030	AROMATIC	CLEAR	1.3L
12	5018	23/M	DARK YELLOW	1.024	AROMATIC	CLEAR	1.4L
13	4031	50/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
14	4032	60/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.4L
15	5019	42/M	DARK YELLOW	1.020	AROMATIC	PRESENT	1.3L
16	4084	42/F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.2L
17	4057	56/F	COLOURLESS	1.008	AROMATIC	CLEAR	1.3L
18	4117	29/F	DARK YELLOW	1.018	AROMATIC	CLEAR	1.3L
19	4090	49/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
20	4098	36/F	DARK YELLOW	1.010	AROMATIC	CLEAR	1.3L

TABLE 10: UTHIRA VATHA SURONITHAM PATIENTS -NEERKKURI - SECOND DAY							
S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL
21	4081	39/F	DARK YELLOW	1.014	AROMATIC	CLEAR	1.5L
22	4136	54/F	COLOURLESS	1.014	AROMATIC	CLEAR	1.4L
23	4111	39/F	DARK YELLOW	1.022	AROMATIC	CLEAR	1.3L
24	4081	35/F	COLOURLESS	1.010	AROMATIC	CLEAR	1.4L
25	4080	33/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.5L
26	4166	25/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.6L
27	4173	46/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.2L
28	4183	53/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
29	4098	40/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L
30	4179	57/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L
31	5118	47/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.3L
32	4249	50/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
33	4253	37/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
34	4259	52/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.5L
35	4302	42/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
36	4298	36/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.2L
37	4289	50/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
38	5279	19/M	DARK YELLOW	1.014	AROMATIC	CLEAR	1.5L
39	4359	42/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L
40	4379	52/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L

TABLE 11: UTHIRA VATHA SURONITHAM PATIENTS - NEERKKURI –THIRD DAY							
S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL
1	3832	52/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.5L
2	4879	41/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
3	3931	56/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
4	3924	45/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
5	3849	24/F	PALE YELLOW	1.012	AMMONIAL	CLOUDY	1.6L
6	3871	57/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
7	3954	52/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
8	4001	47/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.2L
9	3998	52/F	PALE YELLOW	1.022	AROMATIC	CLEAR	1.6L
10	4980	40/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
11	4010	40/F	DARK YELLOW	1.020	AROMATIC	CLEAR	1.3L
12	5018	23/M	PALE YELLOW	1.008	AROMATIC	CLEAR	1.4L
13	4031	50/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.6L
14	4032	60/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L
15	5019	42/M	PALE YELLOW	1.014	AROMATIC	CLEAR	1.4L
16	4084	42/F	PALE YELLOW	1.016	AROMATIC	CLEAR	1.3L
17	4057	56/F	COLOURLESS	1.010	AROMATIC	CLEAR	1.3L
18	4117	29/F	DARK YELLOW	1.016	AROMATIC	CLEAR	1.2L
19	4090	49/F	COLOURLESS	1.006	AROMATIC	CLEAR	1.3L
20	4098	36/F	DARK YELLOW	1.010	AROMATIC	CLEAR	1.3L

TABLE 12: UTHIRA VATHA SURONITHAM PATIENTS - NEERKKURI - THIRD DAY							
S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL
21	4081	39/F	DARK YELLOW	1.012	AROMATIC	CLEAR	1L
22	4136	54/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.4L
23	4111	39/F	DARK YELLOW	1.012	AROMATIC	CLEAR	1.2L
24	4081	35/F	COLOURLESS	1.008	AROMATIC	CLEAR	1.4L
25	4080	33/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.3L
26	4166	25/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1L
27	4173	46/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
28	4183	53/F	COLOURLESS	1.008	AROMATIC	CLEAR	1.4L
29	4098	40/F	DARK YELLOW	1.020	AROMATIC	CLEAR	1.4L
30	4179	57/F	PALE YELLOW	1.018	AROMATIC	CLEAR	1.3L
31	5118	47/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
32	4249	50/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.5L
33	4253	37/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L
34	4259	52/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
35	4302	42/F	PALE YELLOW	1.008	AROMATIC	CLEAR	1.3L
36	4298	36/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
37	4289	50/F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L
38	5279	19/M	DARK YELLOW	1.012	AROMATIC	CLEAR	1.4L
39	4359	42/F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
40	4379	52/F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L

TABLE 13: UTHIRA VATHA SURONITHAM PATIENTS - NEIKKURI - FIRST DAY						
S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPEARDING
1	3832	52/F	COIN	COIN	COIN	SLOW
2	4879	41/M	COIN	DISC	CIRCULAR	SLOW
3	3931	56/F	COIN	DISC	RECTANGLE	SLOW
4	3924	45/F	COIN	COIN	COIN	SLOW
5	3849	24/F	COIN	COIN	COIN	SLOW
6	3871	57/F	DISC	DISC	DISC	SLOW
7	3954	52/F	COIN	CIRCULAR	CIRCULAR	FAST
8	4001	47/F	COIN	COIN	DISC	FAST
9	3998	52/F	COIN	COIN	COIN	SLOW
10	4980	40/M	PEARL	COIN	COIN	SLOW
11	4010	40/F	PEARL	PEARL	PEARL	SLOW
12	5018	23/M	PEARL	COIN	COIN	SLOW
13	4031	50/F	COIN	COIN	COIN	SLOW
14	4032	60/F	PEARL	COIN	COIN	SLOW
15	5019	42/M	COIN	MITER	PEAR	FAST
16	4084	42/F	COIN	COIN	COIN	SLOW
17	4057	56/F	PEARL	COIN	COIN	SLOW
18	4117	29/F	PEARL	PEARL	COIN	SLOW
19	4090	49/F	COIN	COIN	COIN	SLOW
20	4098	36/F	PEARL	COIN	COIN	SLOW

TABLE 14: UTHIRA VATHA SURONITHAM PATIENTS - NEIKKURI - FIRST DAY						
S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPEARDING
21	4081	39/F	COIN	COIN	DISC	SLOW
22	4136	54/F	COIN	COIN	COIN	SLOW
23	4111	39/F	PEARL	COIN	COIN	SLOW
24	4081	35/F	PEARL	COIN	COIN	SLOW
25	4080	33/F	COIN	COIN	COIN	SLOW
26	4166	25/F	PEARL	PEARL	COIN	SLOW
27	4173	46/F	COIN	COIN	COIN	SLOW
28	4183	53/F	PEARL	COIN	COIN	SLOW
29	4098	40/F	COIN	COIN	COIN	SLOW
30	4179	57/F	DISC	SIEVE	SIEVE	FAST
31	5118	47/F	COIN	COIN	COIN	SLOW
32	4249	50/F	COIN	COIN	DISC	SLOW
33	4253	37/F	COIN	COIN	DISC	SLOW
34	4259	52/F	COIN	COIN	COIN	SLOW
35	4302	42/F	COIN	DISC	RECTANGLE	SLOW
36	4298	36/F	COIN	COIN	COIN	SLOW
37	4289	50/F	COIN	COIN	COIN	SLOW
38	5279	19/M	PEARL	COIN	COIN	SLOW
39	4359	42/F	COIN	MITER	BUTTERFLY	FAST
40	4379	52/F	COIN	COIN	CIRCULAR	SLOW

TABLE 15: UTHIRA VATHA SURONITHAM PATIENTS - NEIKKURI - SECOND DAY						
S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPEARDING
1	3832	52/F	COIN	COIN	COIN	SLOW
2	4879	41/M	DISC	DISC	MOUNTAIN	FAST
3	3931	56/F	COIN	RECTANGLE	RECTANGLE	SLOW
4	3924	45/F	SHELL	LEAF	LEAF	FAST
5	3849	24/F	COIN	COIN	DISC	SLOW
6	3871	57/F	COIN	COIN	DISC	SLOW
7	3954	52/F	EGG	SHELL	SIEVE	FAST
8	4001	47/F	COIN	COIN	EGG	SLOW
9	3998	52/F	COIN	COIN	COIN	SLOW
10	4980	40/M	PEARL	COIN	EGG	SLOW
11	4010	40/F	PEARL	PEARL	PEARL	SLOW
12	5018	23/M	COIN	COIN	SEED	SLOW
13	4031	50/F	PEARL	PEARL	PEARL	SLOW
14	4032	60/F	PEARL	COIN	COIN	SLOW
15	5019	42/M	HEART	CONCH	CONCH	FAST
16	4084	42/F	PEARL	COIN	COIN	SLOW
17	4057	56/F	COIN	COIN	COIN	SLOW
18	4117	29/F	COIN	COIN	COIN	SLOW
19	4090	49/F	COIN	COIN	COIN	SLOW
20	4098	36/F	COIN	COIN	COIN	SLOW

TABLE 16: UTHIRA VATHA SURONITHAM PATIENTS -NEIKKURI - SECOND DAY						
S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPEARDING
21	4081	39/F	COIN	COIN	COIN	SLOW
22	4136	54/F	COIN	COIN	COIN	SLOW
23	4111	39/F	COIN	COIN	EGG	SLOW
24	4081	35/F	PEARL	COIN	COIN	SLOW
25	4080	33/F	PEARL	COIN	COIN	SLOW
26	4166	25/F	PEARL	PEARL	COIN	SLOW
27	4173	46/F	PEARL	COIN	DISC	SLOW
28	4183	53/F	PEARL	COIN	DISC	SLOW
29	4098	40/F	PEARL	COIN	COIN	SLOW
30	4179	57/F	COIN	COIN	COIN	SLOW
31	5118	47/F	COIN	COIN	COIN	SLOW
32	4249	50/F	COIN	COIN	COIN	SLOW
33	4253	37/F	PEARL	COIN	COIN	SLOW
34	4259	52/F	COIN	COIN	COIN	SLOW
35	4302	42/F	COIN	COIN	EGG	SLOW
36	4298	36/F	COIN	COIN	COIN	SLOW
37	4289	50/F	PEARL	COIN	COIN	SLOW
38	5279	19/M	COIN	COIN	COIN	SLOW
39	4359	42/F	COIN	COIN	RECTANGLE	FAST
40	4379	52/F	PEARL	COIN	COIN	SLOW

TABLE 17: UTHIRA VATHA SURONITHAM PATIENTS - NEIKKURI - THIRD DAY						
S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPEARDING
1	3832	52/F	COIN	COIN	COIN	SLOW
2	4879	41/M	DISC	CIRCULAR	CIRCULAR	FAST
3	3931	56/F	COIN	DISC	CIRCULAR	SLOW
4	3924	45/F	COIN	COIN	COIN	SLOW
5	3849	24/F	COIN	COIN	COIN	SLOW
6	3871	57/F	CIRCULAR	CIRCULAR	CIRCULAR	FAST
7	3954	52/F	COIN	COIN	EGG	SLOW
8	4001	47/F	COIN	COIN	COIN	SLOW
9	3998	52/F	PEARL	COIN	COIN	SLOW
10	4980	40/M	COIN	COIN	EMBRYO	SLOW
11	4010	40/F	PEARL	PEARL	PEARL	SLOW
12	5018	23/M	COIN	COIN	COIN	SLOW
13	4031	50/F	COIN	COIN	COIN	SLOW
14	4032	60/F	PEARL	PEARL	PEARL	SLOW
15	5019	42/M	COIN	COIN	COIN	SLOW
16	4084	42/F	PEARL	COIN	COIN	SLOW
17	4057	56/F	COIN	COIN	COIN	SLOW
18	4117	29/F	COIN	COIN	COIN	SLOW
19	4090	49/F	COIN	COIN	COIN	SLOW
20	4098	36/F	COIN	COIN	COIN	SLOW

TABLE 18: UTHIRA VATHA SURONITHAM PATIENTS - NEIKKURI - THIRD DAY

S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPEARDING
21	4081	39/F	COIN	COIN	COIN	SLOW
22	4136	54/F	PEARL	COIN	COIN	SLOW
23	4111	39/F	PEARL	COIN	COIN	SLOW
24	4081	35/F	COIN	COIN	COIN	SLOW
25	4080	33/F	COIN	COIN	COIN	SLOW
26	4166	25/F	COIN	DISC	DISC	SLOW
27	4173	46/F	PEARL	COIN	COIN	SLOW
28	4183	53/F	COIN	DISC	DISC	SLOW
29	4098	40/F	COIN	COIN	COIN	SLOW
30	4179	57/F	COIN	COIN	COIN	SLOW
31	5118	47/F	PEARL	PEARL	PEARL	SLOW
32	4249	50/F	COIN	COIN	COIN	SLOW
33	4253	37/F	PEARL	PEARL	COIN	SLOW
34	4259	52/F	COIN	COIN	MITER	SLOW
35	4302	42/F	COIN	COIN	COIN	SLOW
36	4298	36/F	COIN	COIN	CIRCULAR	FAST
37	4289	50/F	PEARL	PEARL	PEARL	SLOW
38	5279	19/M	PEARL	PEARL	PEARL	SLOW
39	4359	42/F	COIN	EGG	RECTANGLE	FAST
40	4379	52/F	COIN	COIN	COIN	SLOW

TABLE 19: HEALTHY VOLUNTEERS LAB INVESTIGATIONS

S.NO	IP NO	AGE/SEX	HB	TRBC	TC	DC			PLT	ESR		SEROLOGY			MOTION		
						N	L	E		30	1	RA	CRP	ASO	OVA	CYST	OCCULT BLOOD
1	D19928	25/M	12.3	4.6	6600	50	44	6	2.8	2	4	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
2	D19929	60/M	12.7	4.6	5700	55	40	5	2.1	2	6	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
3	D30224	30/M	13.4	5.2	6400	73	25	2	2.6	2	4	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
4	C86813	27/M	15.8	5.3	6700	60	33	7	2.1	2	4	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
5	C72223	37/M	14	4.5	5800	42	53	5	2.5	2	6	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
6	D15789	27/ F	12.6	4.9	7600	62	36	2	1.8	12	26	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
7	D15797	24/ F	13	5.1	9800	65	30	5	2	2	6	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
8	D13393	26/ F	11.2	4.6	10000	64	33	3	2.4	2	10	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
9	C33345	38/M	11.5	4	7,700	42	53	5	1.9	6	12	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT
10	C33793	37/M	8	5.1	3,300	46	50	4	2.2	2	4	NEGATIVE	NEGATIVE	NEGATIVE	NIL	NIL	ABSENT

TABLE 20: HEALTHY VOLUNTEERS LAB INVESTIGATIONS

S.NO	OP NO	AGE/SEX	SUGAR		CHOLESTEROL					URIC ACID	UREA	CREATININE	SGOT	SGPT	ALP	PROTEIN		
			F	PP	TOTAL	HDL	LDL	VLDL	TGL							TOTAL	ALBUMIN	GLOBULIN
1	D19928	25/M	89	-	149	33	76	12	62	5.1	27	0.8	21	24	176	5.5	3.5	2
2	D19929	60/M	104	-	190	39	92	19	98	5.6	27	0.8	16	19	166	5.6	3.5	2.1
3	D 30224	30/M	106	-	225	40	106	23	118	6	21	0.8	33	35	195	7.5	5	2.5
4	C 86813	27/M	100	-	199	34	153	26	130	5.2	14	0.4	23	18	178	6.4	4.2	2.2
5	C72223	37/M	80	-	170	36	87	39	198	4	19	0.8	22	27	175	7.5	4.2	3.3
6	D15789	27/ F	80	-	161	35	82	21	107	5.2	15	0.5	10	12	188	6.2	4.8	1.4
7	D15797	24/ F	76	-	120	30	70	12	63	6.5	17	0.6	16	18	193	7.2	3.9	3.3
8	D13393	26/ F	81	-	120	30	70	12	62	6	14	0.4	20	22	207	7	5.1	1.9
9	C33345	38/M	89	110	223	30	141	52	259	5.5	26	0.7	26	23	189	6.9	4.8	2.1
10	C33793	37/M	72	115	208	42	150	16	78	5.4	30	0.8	27	23	219	7.8	4.6	3.2

TABLE 21: HEALTHY VOLUNTEERS LAB INVESTIGATIONS

S.NO	OP/IP NO	AGE/SEX	PH	SPECIFIC GRAVITY	ALBUMIN	SUGAR	ACETONE	BILE SALT	BILE PIGMENT	UROBILINOGEN	OCCULT BLOOD	DEPOSITS	
												PUS	EPI
1	D19928	25/F	5.4	1.016	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-3
2	D 19929	60/M	6	1.018	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	3-5
3	D30224	30/M	5.6	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
4	C 86813	27/M	4.6	1.014	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	3-6	3-6
5	C72223	37/M	4.9	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	2-4
6	D15789	27/ F	5.5	1.012	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	2-4	2-4
7	D15797	24/ F	6.1	1.022	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	1-2	3-5
8	D13393	26/ F	4.8	1.016	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	5-10
9	C33345	38/M	5.2	1.010	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-8	3-6
10	C33793	37/M	5.1	1.018	NIL	NIL	ABSENT	NIL	NEGATIVE	NORMAL	ABSENT	4-5	4-6

TABLE 22: HEALTHY VOLUNTEERS NEERKKURI FIRST DAY

S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY(AEDAI)	ODOUR(MANAM)	FROTH(NURAI)	ENJAL
1	D19928	25/M	PALE YELLOW	1.016	AROMATIC	CLEAR	1.1L
2	D19929	60/M	PALE YELLOW	1.018	AROMATIC	CLEAR	1.2L
3	D 30224	30/M	DARK YELLOW	1.012	AROMATIC	CLEAR	1.3L
4	C 86813	27/M	PALE YELLOW	1.014	AROMATIC	CLEAR	1.4L
5	C72223	37/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.2L
6	D15789	27/ F	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
7	D15797	24/ F	PALE YELLOW	1.022	AROMATIC	CLEAR	1.3L
8	D13393	26/ F	PALE YELLOW	1.016	AROMATIC	CLEAR	1L
9	C33345	38/M	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
10	C33793	37/M	PALE YELLOW	1.018	AROMATIC	CLEAR	1.2L

TABLE 23: HEALTHY VOLUNTEERS NEERKKURI SECOND DAY							
S.NO	OP/IP NO	AGE/SEX	COLOUR (NIRAM)	SPECIFIC GRAVITY (AEDAI)	ODOUR (MANAM)	FROTH (NURAI)	ENJAL
1	D19928	25/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
2	D19929	60/M	PALE YELLOW	1.022	AROMATIC	CLEAR	1.2L
3	D30224	30/M	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
4	C86813	27/M	PALE YELLOW	1.016	AROMATIC	CLEAR	1.4L
5	C72223	37/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.4L
6	D15789	27/ F	PALE YELLOW	1.018	AROMATIC	CLEAR	1.4L
7	D15797	24/ F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.3L
8	D13393	26/ F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.4L
9	C33345	38/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.5L
10	C33793	37/M	PALE YELLOW	1.016	AROMATIC	CLEAR	1.2L

TABLE 24: HEALTHY VOLUNTEERS NEERKKURI THIRD DAY

S.NO	OP/IP NO	AGE/SEX	COLOUR(NIRAM)	SPECIFIC GRAVITY (AEDAI)	ODOUR (MANAM)	FROTH (NURAI)	ENJAL
1	D19928	25/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.4L
2	D19929	60/M	DARK YELLOW	1.014	AROMATIC	CLEAR	1.3L
3	D30224	30/M	PALE YELLOW	1.018	AROMATIC	CLEAR	1.5L
4	C86813	27/M	PALE YELLOW	1.022	AROMATIC	CLEAR	1.2L
5	C72223	37/M	PALE YELLOW	1.012	AROMATIC	CLEAR	1.3L
6	D15789	27/ F	PALE YELLOW	1.010	AROMATIC	CLEAR	1.3L
7	D15797	24/ F	PALE YELLOW	1.020	AROMATIC	CLEAR	1.5L
8	D13393	26/ F	PALE YELLOW	1.014	AROMATIC	CLEAR	1.4L
9	C33345	38/M	PALE YELLOW	1.014	AROMATIC	CLEAR	1.3L
10	C33793	37/M	PALE YELLOW	1.022	AROMATIC	CLEAR	1.4L

TABLE 25: HEALTHY VOLUNTEERS NEIKKURI – FIRST DAY

S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPREADING
1	D19928	25/M	COIN	COIN	COIN	SLOW
2	D19929	60/M	COIN	COIN	COIN	SLOW
3	D30224	30/M	COIN	COIN	COIN	SLOW
4	C86813	27/M	COIN	COIN	COIN	SLOW
5	C72223	37/M	COIN	COIN	COIN	SLOW
6	D15789	27/ F	COIN	COIN	COIN	SLOW
7	D15797	24/ F	COIN	COIN	COIN	SLOW
8	D13393	26/ F	COIN	COIN	CIRCULAR	SLOW
9	C33345	38/M	COIN	EGG	CIRCULAR	SLOW
10	C33793	37/M	COIN	COIN	CIRCULAR	SLOW

TABLE 26: HEALTHY VOLUNTEERS NEIKKURI –SECOND DAY

S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPREADING
1	D19928	25/M	COIN	COIN	CIRCULAR	SLOW
2	D19929	60/M	COIN	COIN	COIN	SLOW
3	C30224	30/M	COIN	CIRCULAR	CIRCULAR	SLOW
4	C86813	27/M	COIN	COIN	COIN	SLOW
5	C72223	37/M	COIN	COIN	CIRCULAR	SLOW
6	D15789	27/ F	COIN	COIN	COIN	SLOW
7	D15797	24/ F	COIN	COIN	COIN	SLOW
8	D13393	26/ F	COIN	CIRCULAR	CIRCULAR	SLOW
9	C33345	38/M	COIN	COIN	CIRCULAR	SLOW
10	C33793	37/M	COIN	CIRCULAR	CIRCULAR	SLOW

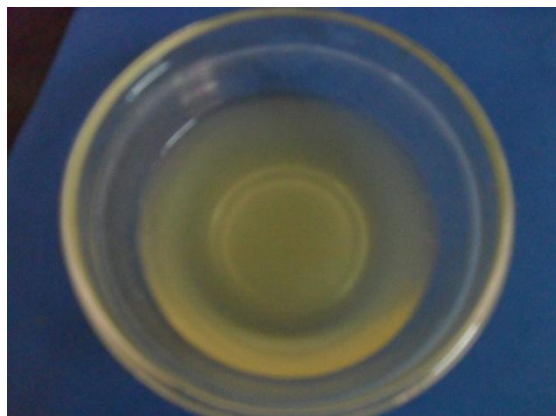
TABLE 26: HEALTHY VOLUNTEERS NEIKKURI – THIRD DAY						
S.NO	OP/IP NO	AGE/SEX	FIRST MINUTE	THIRD MINUTE	SEVENTH MINUTE	SPREADING
1	D19928	25/M	JASMINE BUD	JASMINE BUD	LUTE	SLOW
2	D19929	60/M	COIN	COIN	COIN	SLOW
3	D30224	30/M	COIN	COIN	COIN	SLOW
4	C86813	27/M	COIN	COIN	COIN	SLOW
5	C72223	37/M	COIN	COIN	RING	SLOW
6	D15789	27/ F	COIN	COIN	COIN	SLOW
7	D15797	24/ F	COIN	COIN	JASMINE BUD	SLOW
8	D13393	26/ F	COIN	COIN	CIRCULAR	SLOW
9	C33345	38/M	COIN	EGG	RING	SLOW
10	C33793	37/M	COIN	COIN	CIRCULAR	SLOW

NEER KKURI

PALE YELLOW



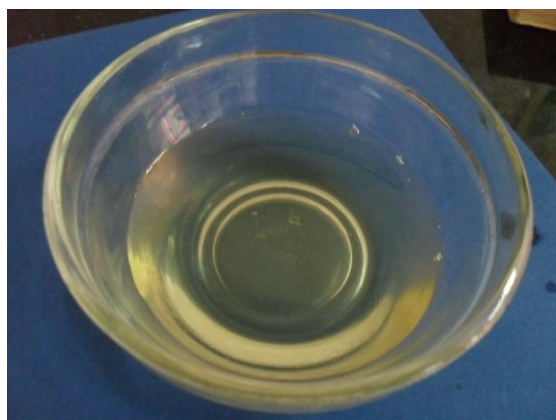
CLOUDY



DARK YELLOW



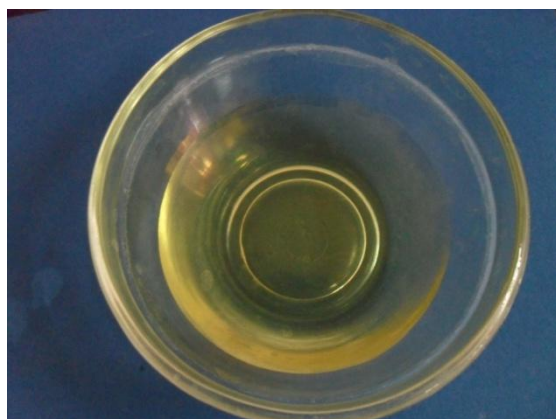
FROTH



COLOURLESS



CLEAR

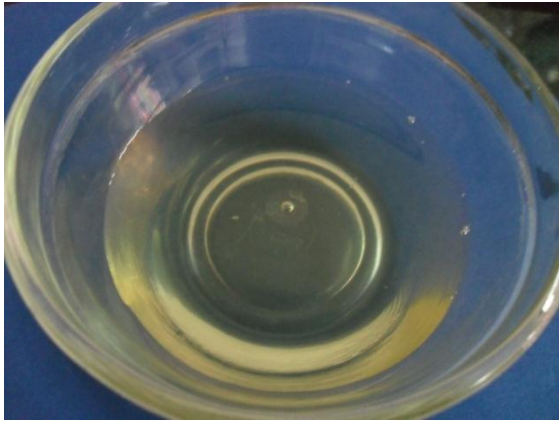


UTHIRAVATHASURONITHAM PATIENT

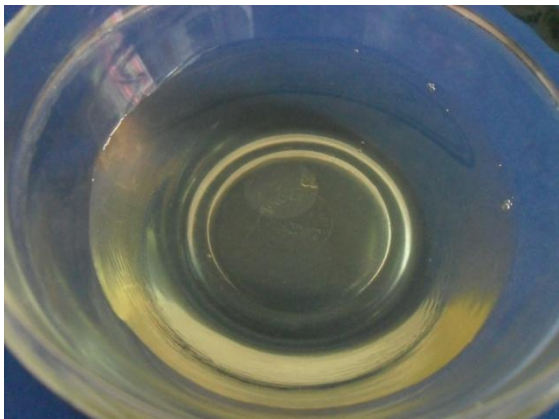
1.IP NO:3832 52/F

DAY- 1

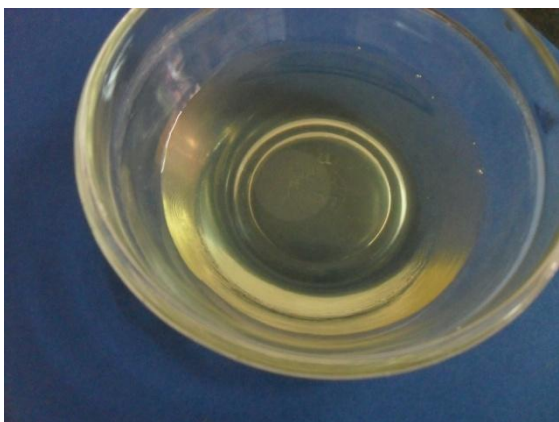
MINUTE-1 SHAPE:COIN



THIRD MINUTE SHAPE: COIN

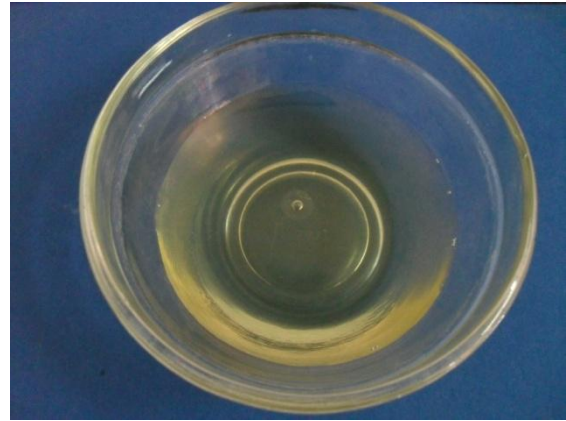


SEVENTH MINUTE SHAPE: COIN

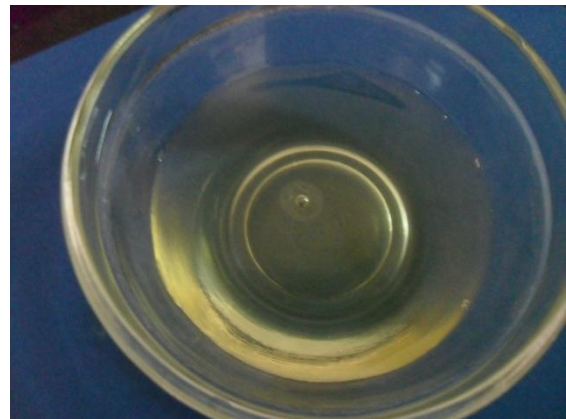


DAY- 2

FIRST MINUTE SHAPE:COIN



THIRD MINUTE SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN

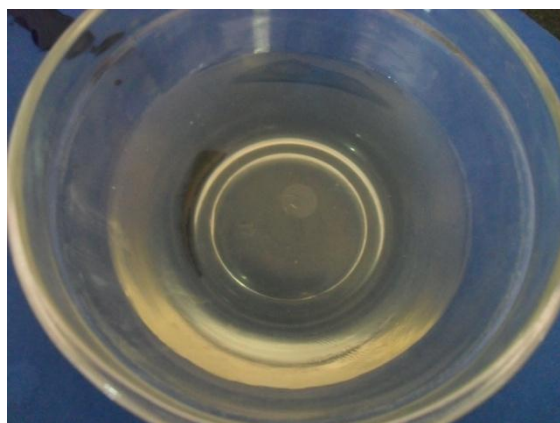


2.4879 41/M

DAY- 3

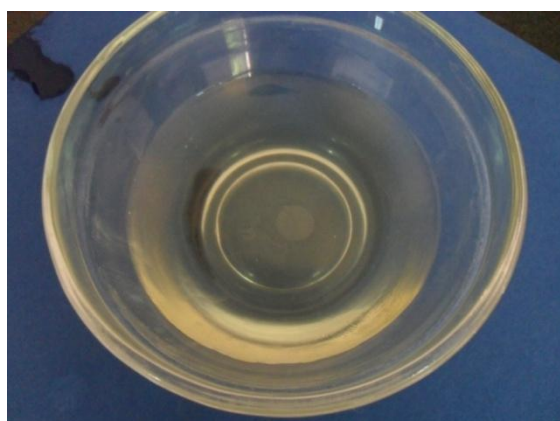
FIRST MINUTE

SHAPE: COIN



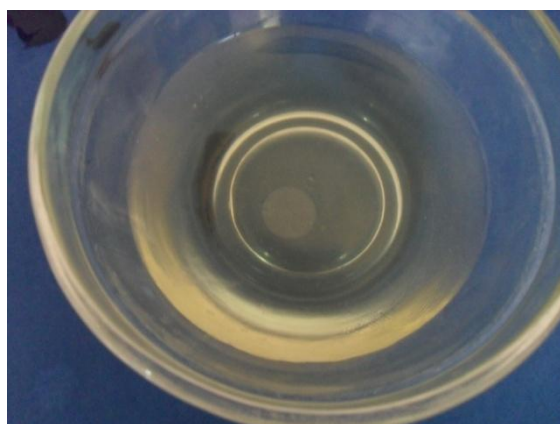
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

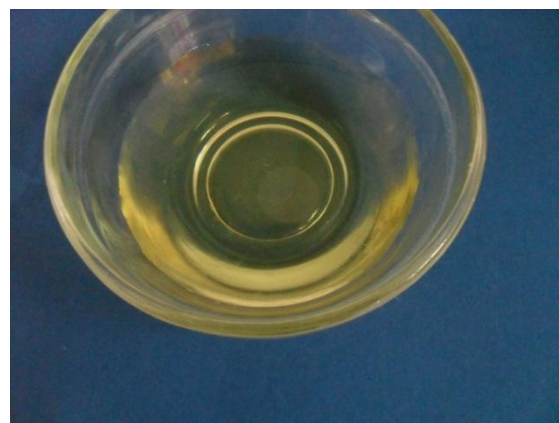
SHAPE: COIN



DAY- 1

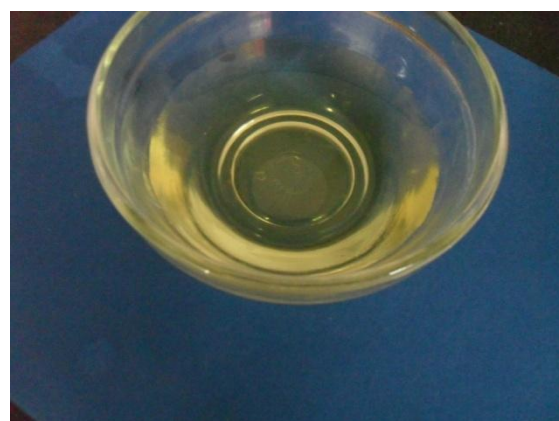
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: DISC



SEVENTH MINUTE

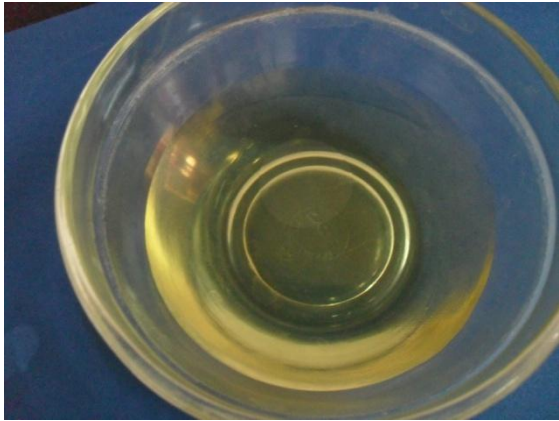
SHAPE: CIRCULAR



DAY- 2

FIRST MINUTE

SHAPE: DISC



THIRD MINUTE

SHAPE: DISC



SEVENTH

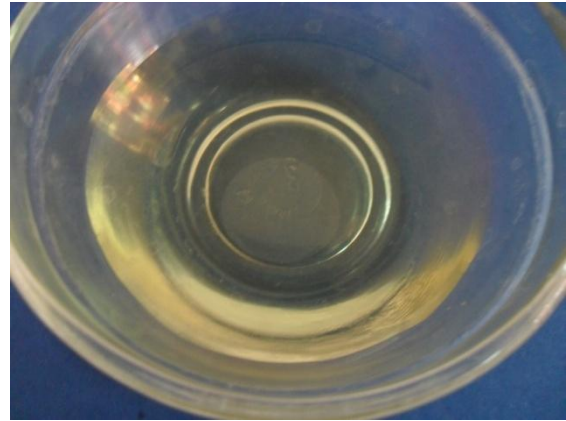
SHAPE: MOUNTAIN



DAY- 3

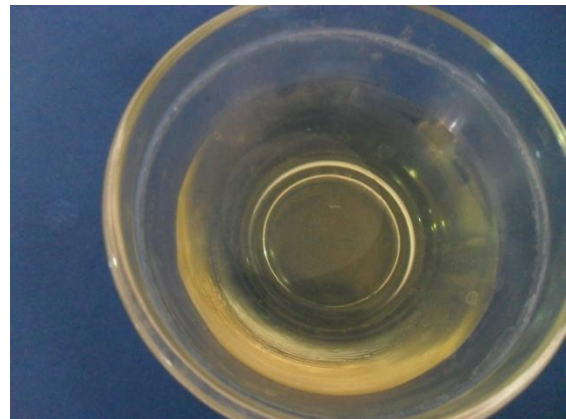
FIRST MINUTE

SHAPE: DISC



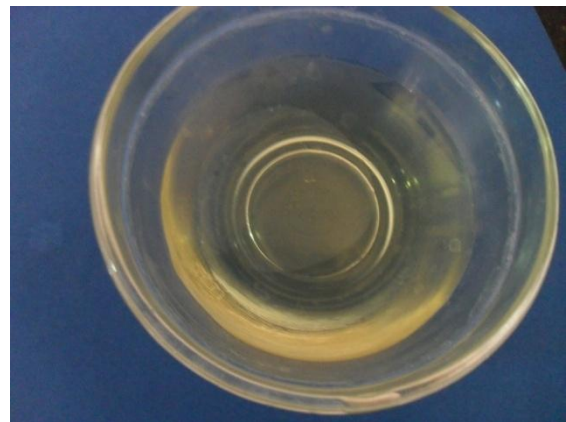
THIRD MINUTE

SHAPE: CIRCULAR



SEVENTH MINUTE

SHAPE: CIRCULAR

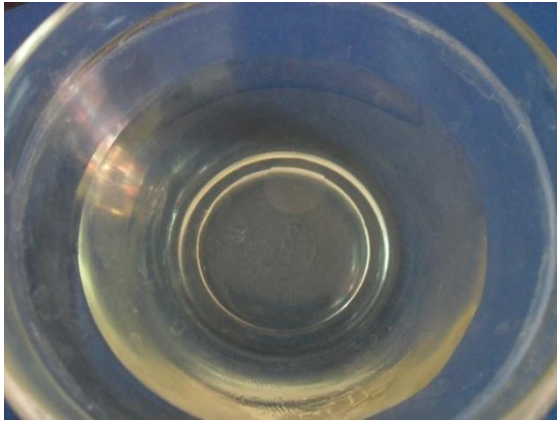


3.IP NO:3931 56/F

DAY- 1

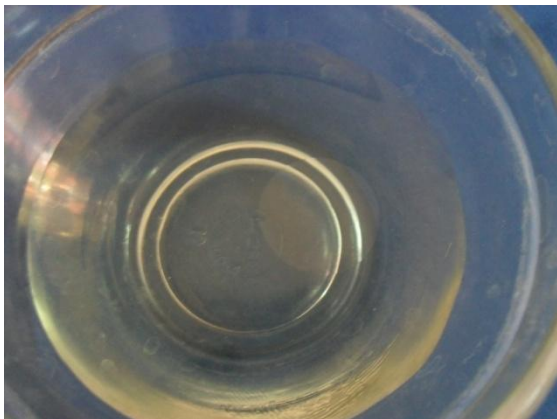
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: DISC



SEVENTH

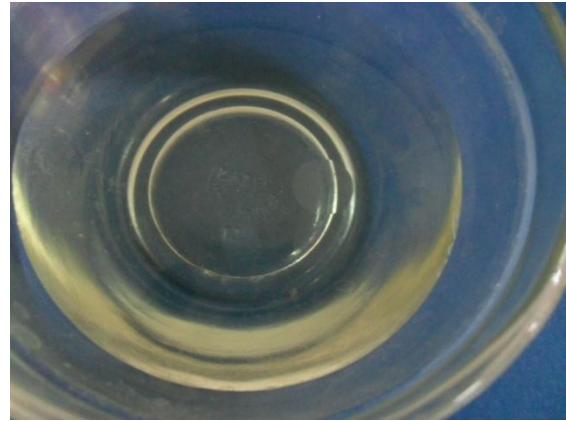
SHAPE: RECTANGLE



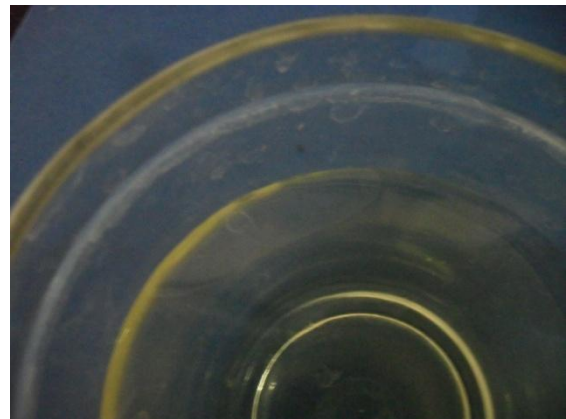
DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE SHAPE: RECTANGLE



SEVENTH MINUTE SHAPE: RECTANGLE

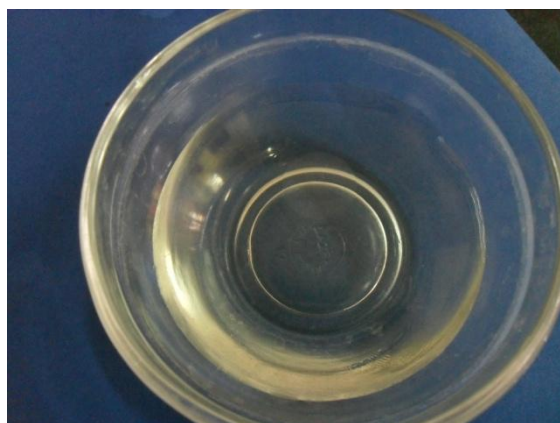


4. IP NO: 3924 45/F

DAY- 3

FIRST MINUTE

SHAPE: COIN



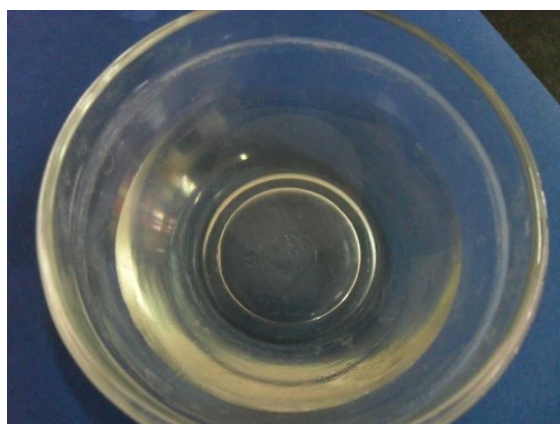
THIRD MINUTE

SHAPE: DISC



SEVENTH MINUTE

SHAPE: CIRCULAR



DAY- 1

FIRST MINUTE

SHAPE: COIN



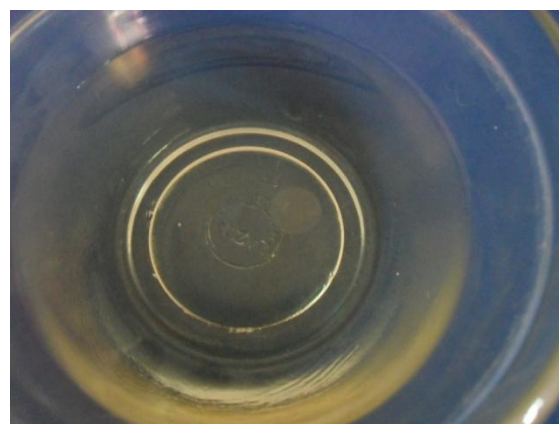
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

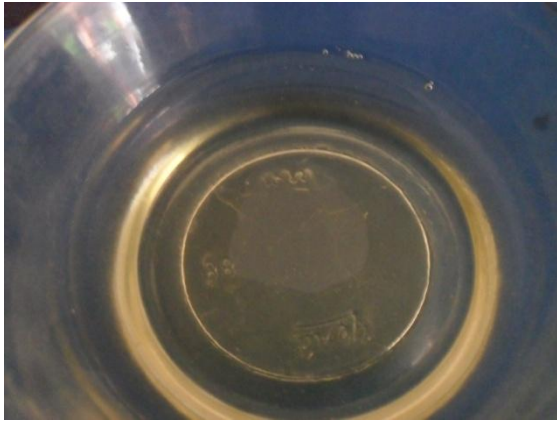
SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: SHELL



THIRD MINUTE

SHAPE: LEAF



SEVENTH MINUTE

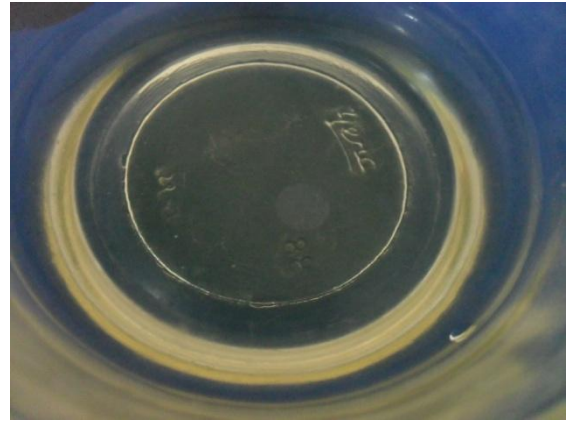
SHAPE: LEAF



DAY- 3

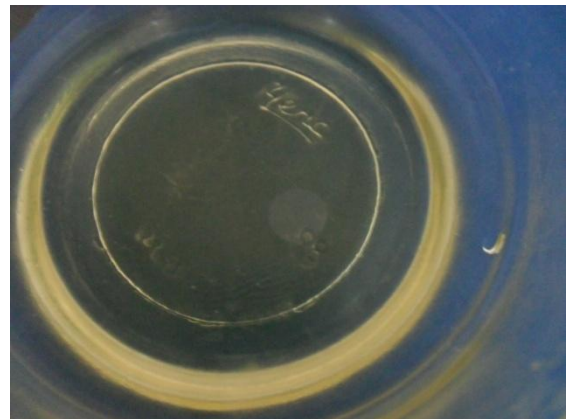
FIRST MINUTE

SHAPE: COIN



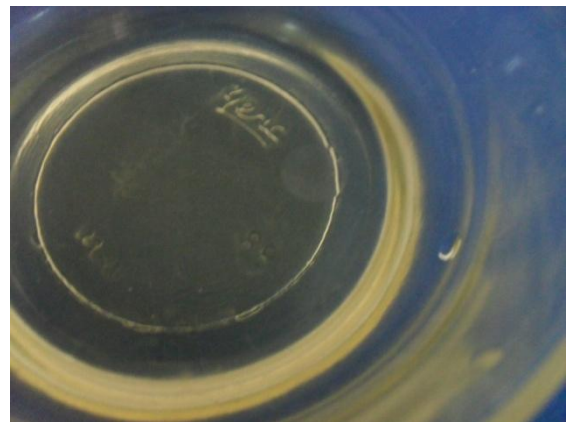
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



5.IP NO:3849 25/F

DAY- 2

FIRST MINUTE

SHAPE: COIN



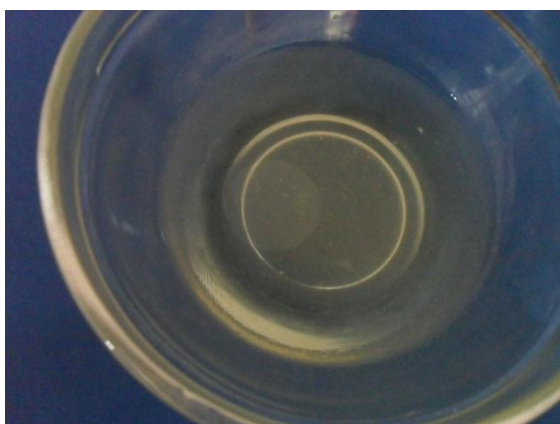
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: DISC



6.IP NO: 3871 57/F

DAY- 1

FIRST MINUTE

SHAPE: DISC



THIRD MINUTE

SHAPE: DISC



SEVENTH MINUTE

SHAPE: DISC



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: DISC



DAY- 3

FIRST MINUTE

SHAPE: CIRCULAR



THIRD MINUTE

SHAPE: CIRCULAR



SEVENTH MINUTE

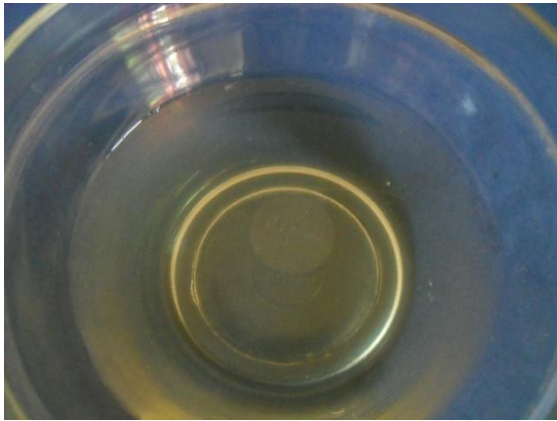
SHAPE: CIRCULAR



7.IP NO: 3954 52/F

DAY- 1

FIRST MINUTE SHAPE: COIN



THIRD MINUTE SHAPE: CIRCULAR



SEVENTH MINUTE SHAPE: CIRCULAR



DAY- 2

FIRST MINUTE SHAPE: EGG



THIRD MINUTE SHAPE: SHELL



SEVENTH MINUTE SHAPE: SIEVE



8.IP NO:4001 47/F

DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: EGG



DAY- 1

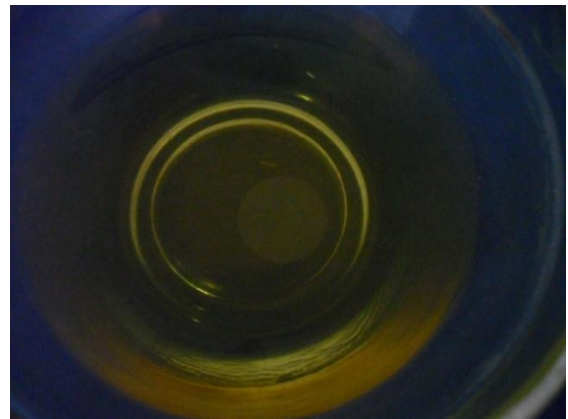
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: DISC



DAY- 2

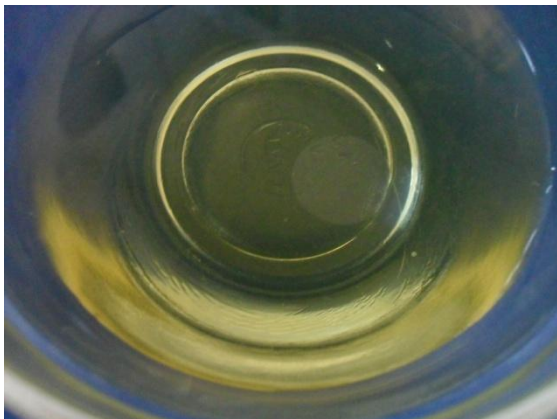
FIRST MINUTE

SHAPE: COIN

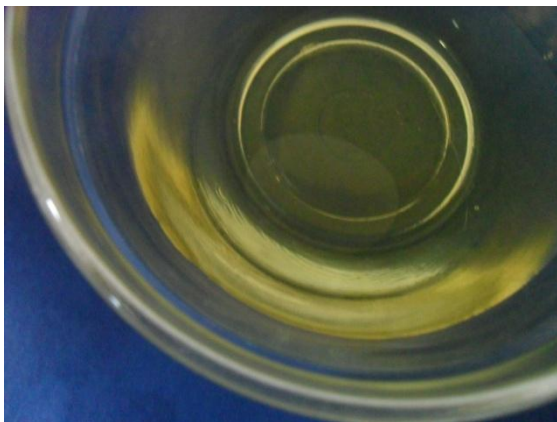


THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE SHAPE: EGG



DAY- 3

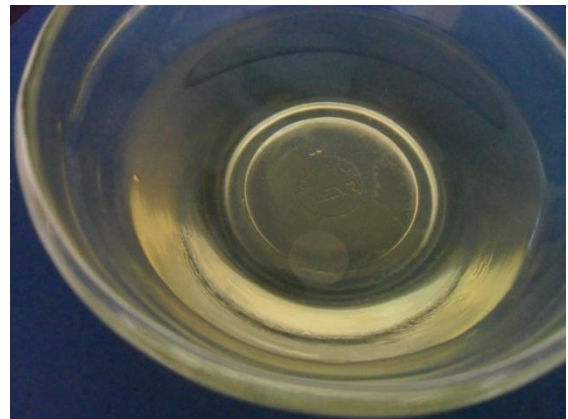
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN

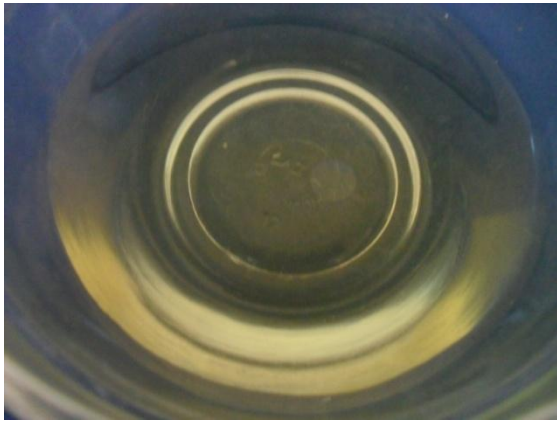


9. IP NO:3998 52/F

DAY- 1

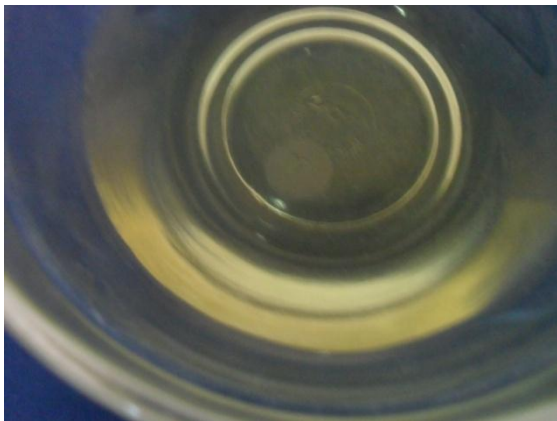
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



10. IP NO: 4980 40/M

DAY- 3

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 1

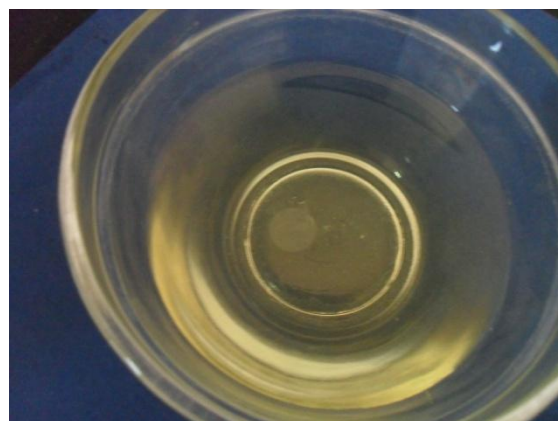
FIRST MINUTE

SHAPE: PEARL



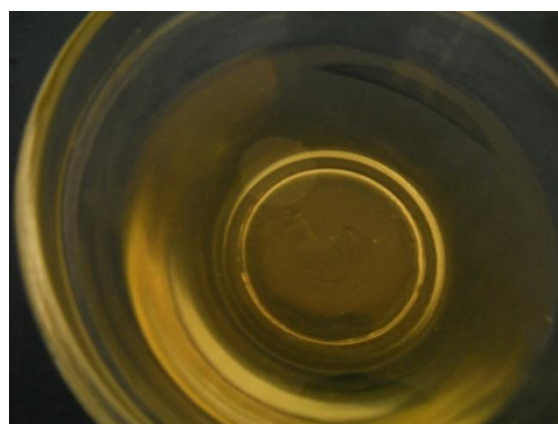
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

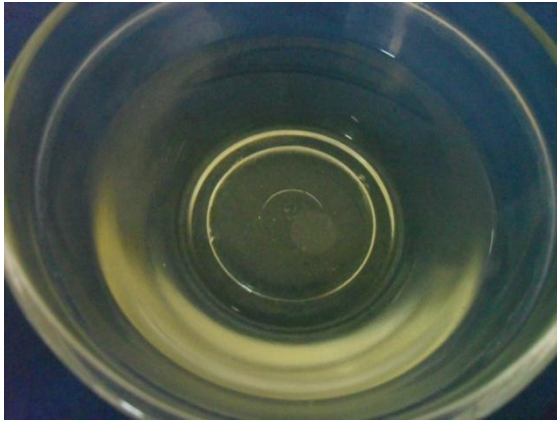
SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: PEARL

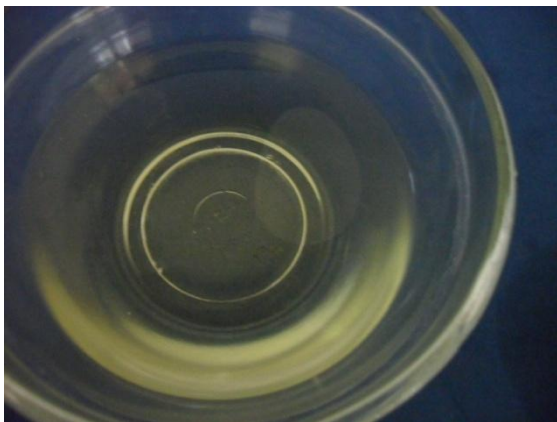


THIRD MINUTE

SHAPE: COIN



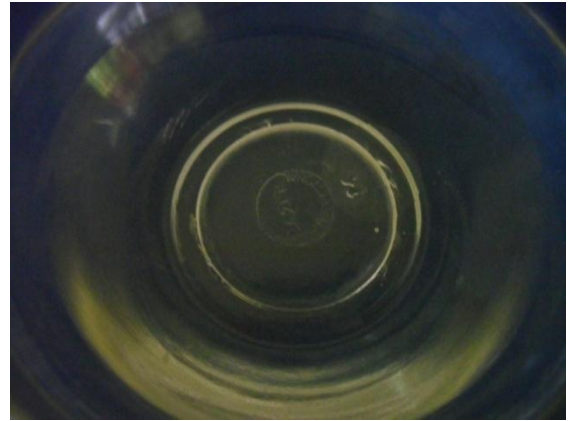
SEVENTH MINUTE SHAPE: EGG



DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



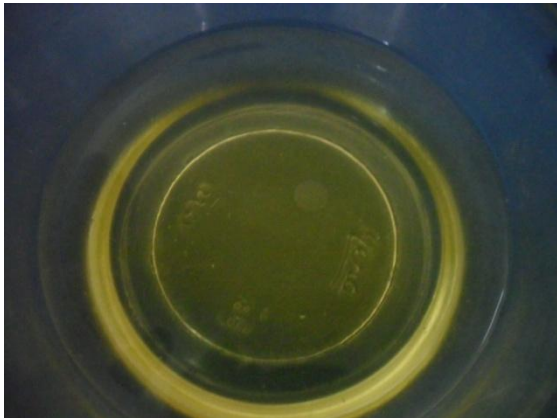
SEVENTH MINUTE SHAPE: EMBRYO



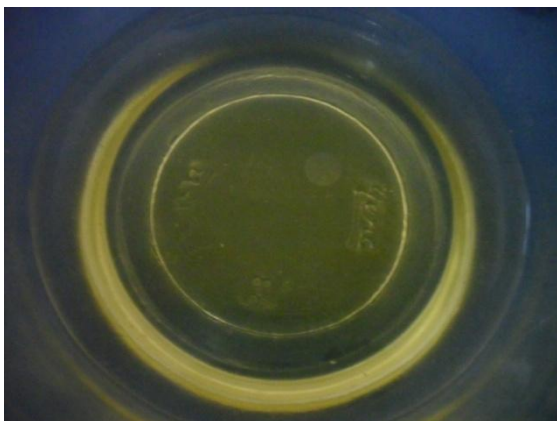
11. IP NO: 4010 40/F

DAY- 1

FIRST MINUTE SHAPE: PEARL



THIRD MINUTE SHAPE: PEARL



SEVENTH MINUTE SHAPE: PEARL



DAY- 2

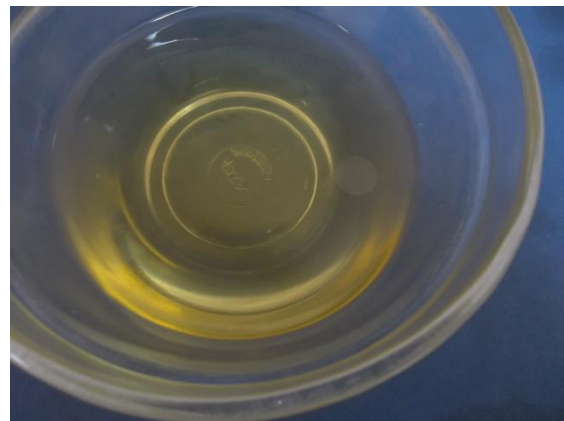
FIRST MINUTE SHAPE: PEARL



THIRD MINUTE SHAPE: PEARL



SEVENTH MINUTE SHAPE: PEARL

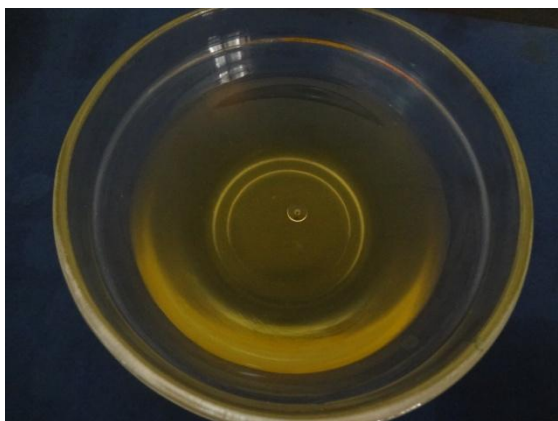


12. IP NO: 5018 23/M

DAY- 3

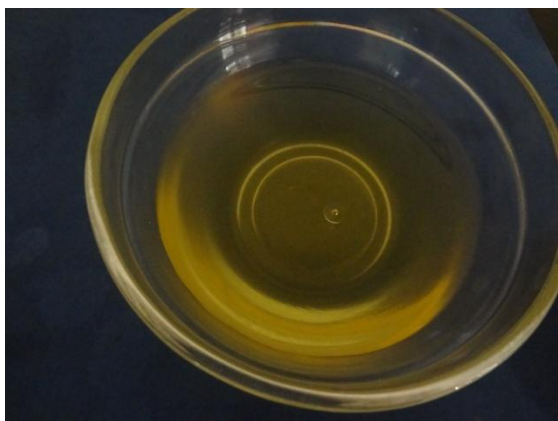
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: PEARL



DAY- 1

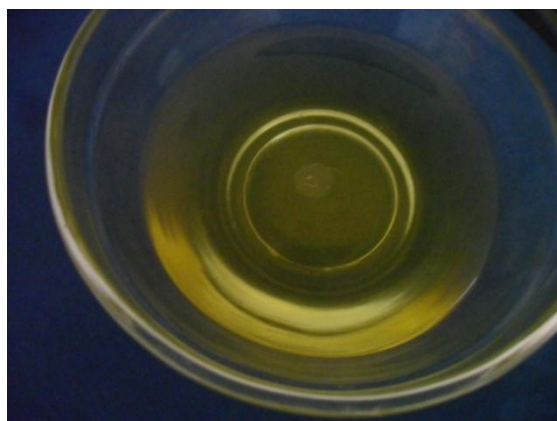
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

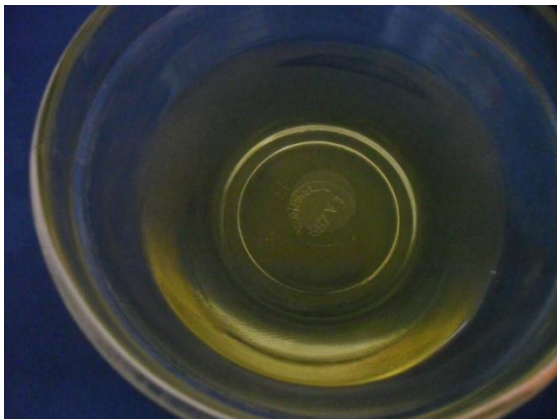
FIRST MINUTE

SHAPE: COIN

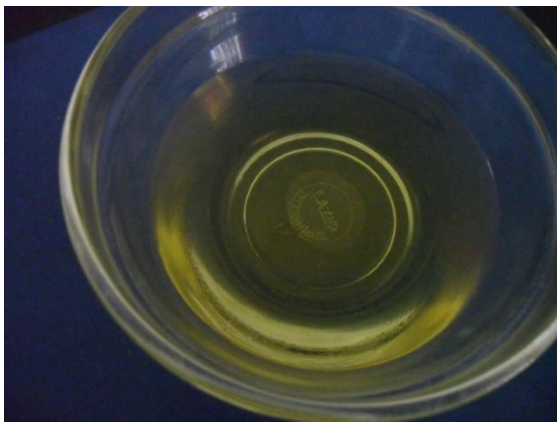


THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE SHAPE: SEED



DAY- 3

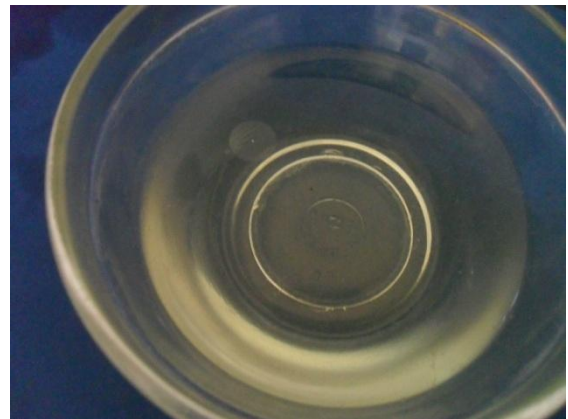
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN

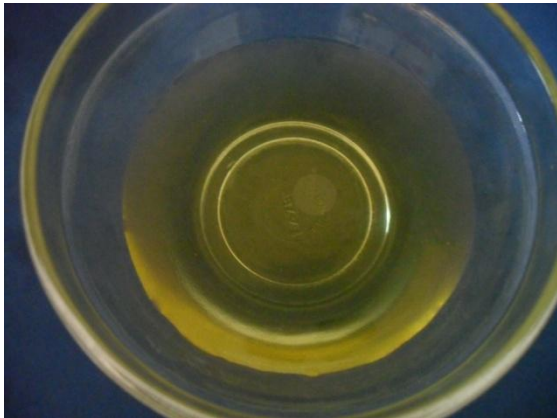


13. IP NO: 4031 50/F

DAY- 1

FIRST MINUTE

SHAPE: COIN



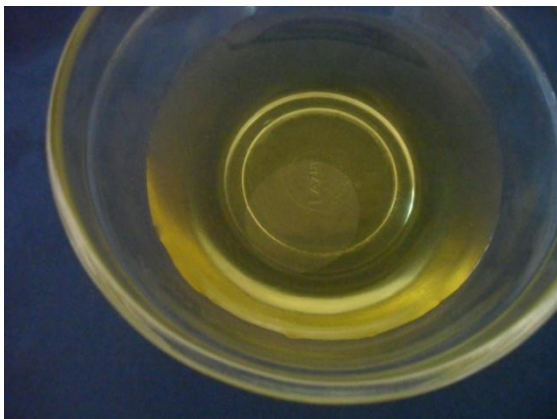
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: PEARL



14. IP NO: 4032 60/F

DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 1

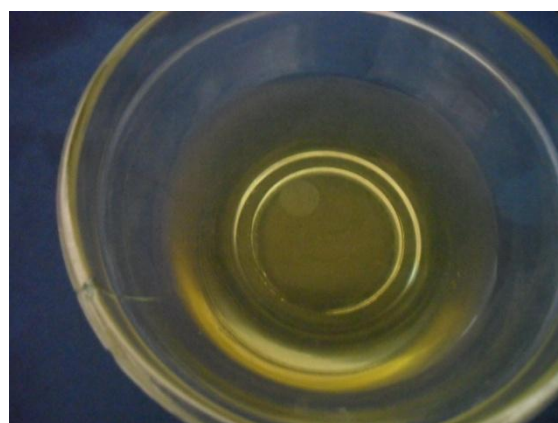
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: PEARL



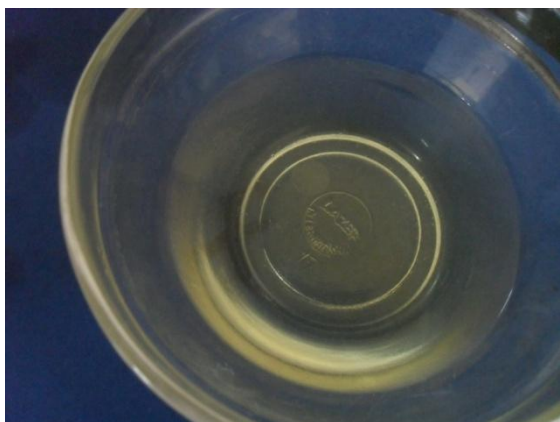
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: PEARL



15. IP NO: 5019

42/M

DAY- 1

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: MITER



SEVENTH MINUTE SHAPE: pear



DAY- 2

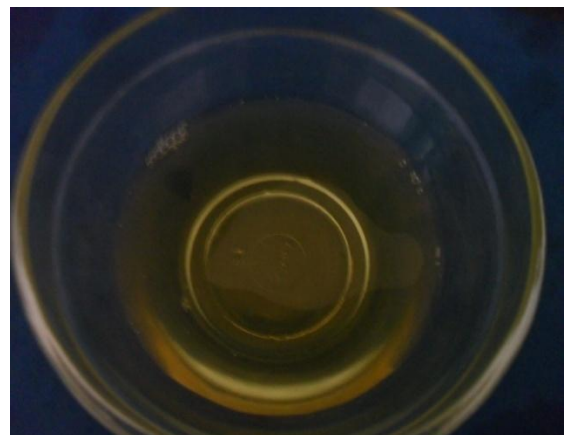
FIRST MINUTE

SHAPE: HEART

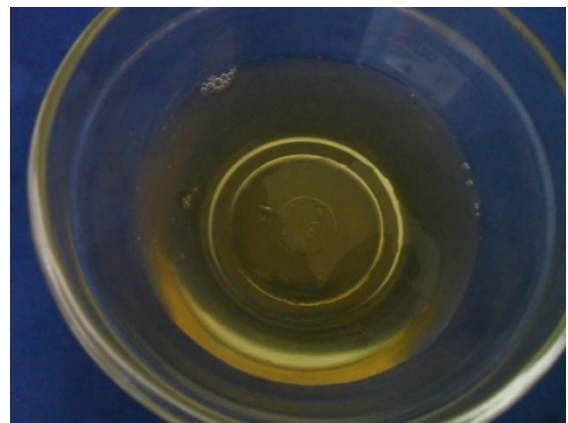


THIRD MINUTE

SHAPE: CONCH



SEVENTH MINUTE SHAPE: CONCH



16. IP NO: 4084 42/F

DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

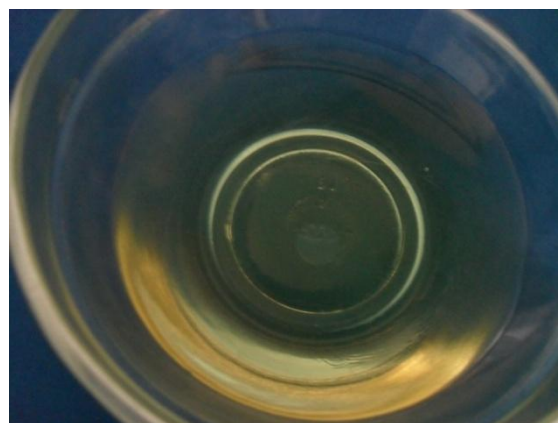
SHAPE: COIN



DAY- 1

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE:PEARL



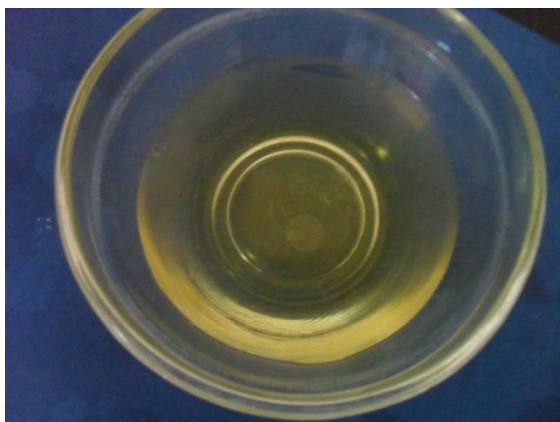
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

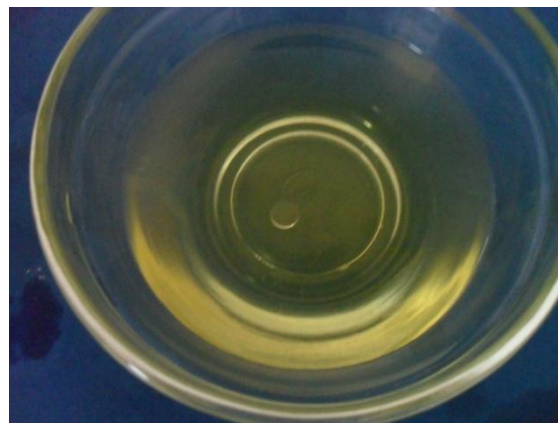
SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN

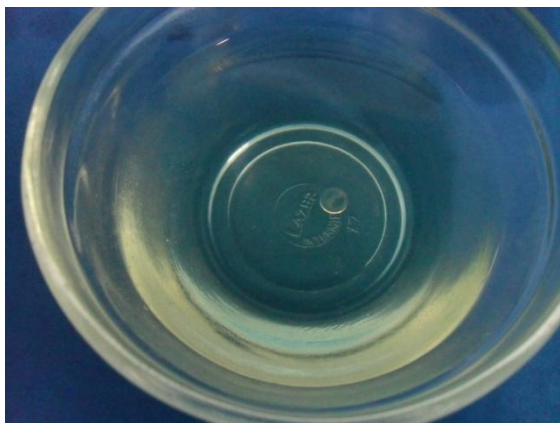


17. IP NO: 4057 56/F

DAY- 1

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

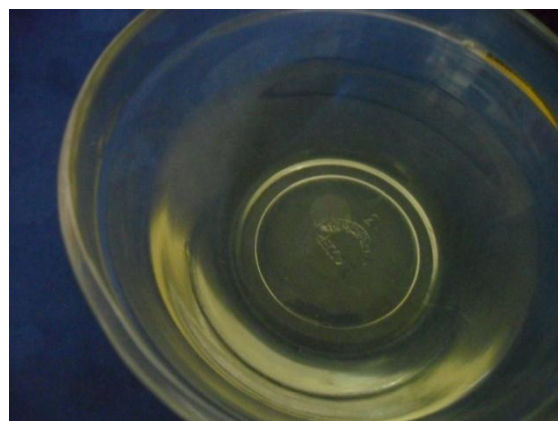
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



18 IP NO: 4117 29/F

DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

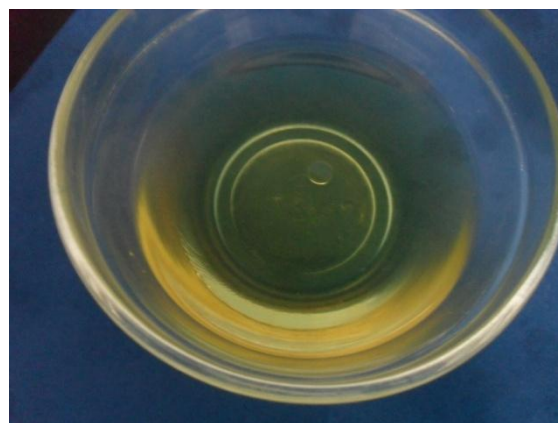
SHAPE: COIN



DAY- 1

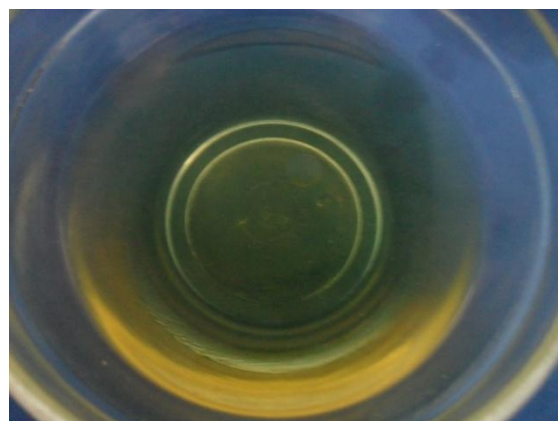
FIRST MINUTE

SHAPE: PEARL



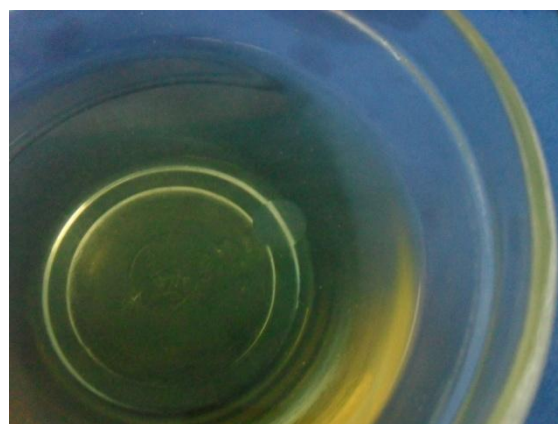
THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

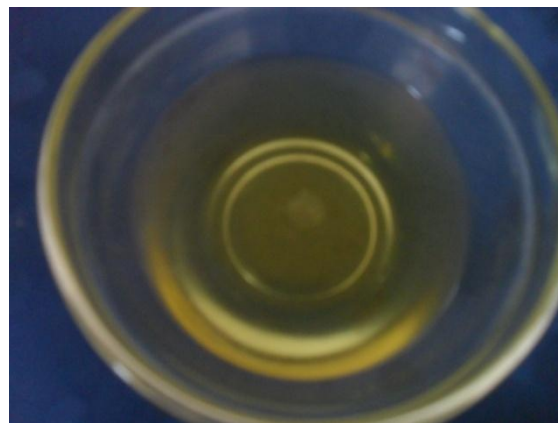
SHAPE: COIN



DAY- 3

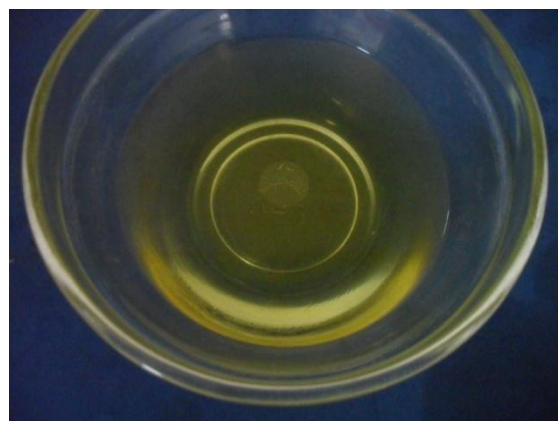
FIRST MINUTE

SHAPE: COIN



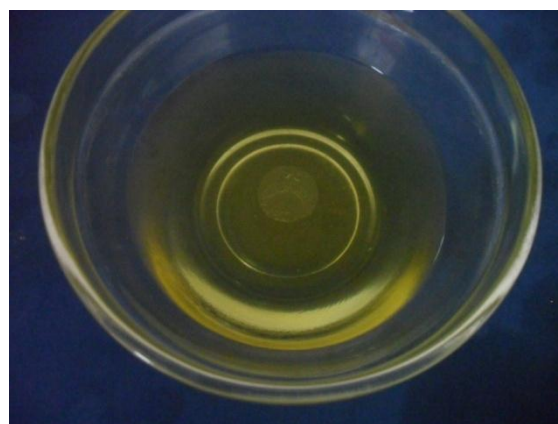
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



19. IP NO: 4090 49/F

DAY- 1

FIRST MINUTE

SHAPE: COIN



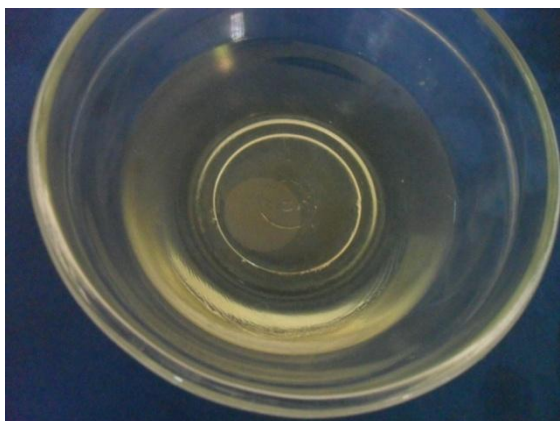
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

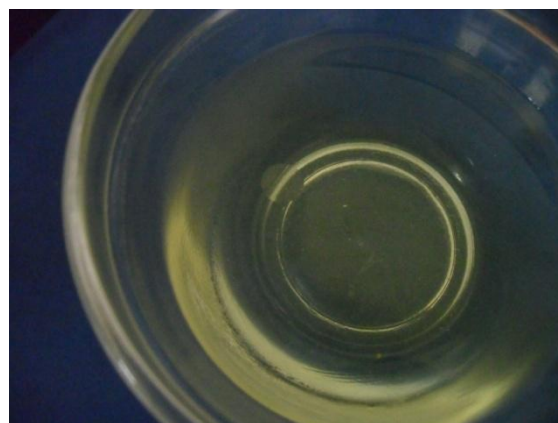
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



20. IP NO: 4098 36/F

DAY- 3

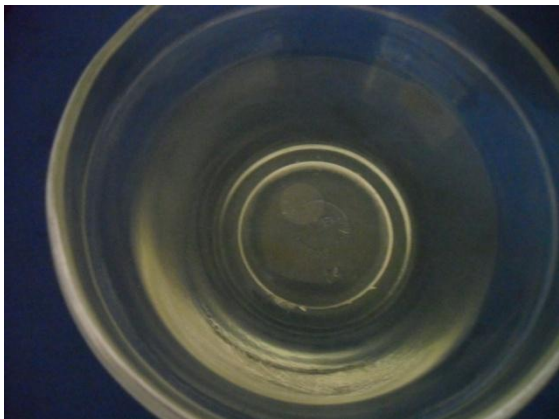
FIRST MINUTE

SHAPE: COIN



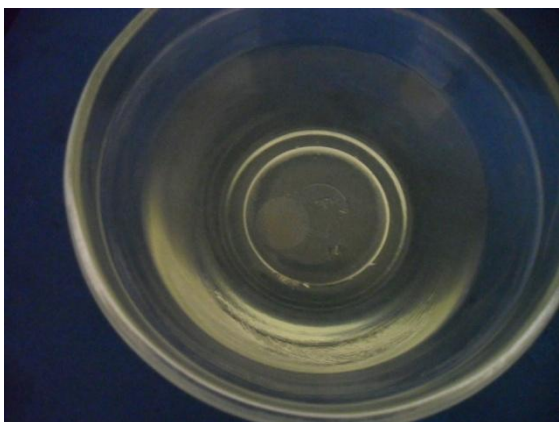
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

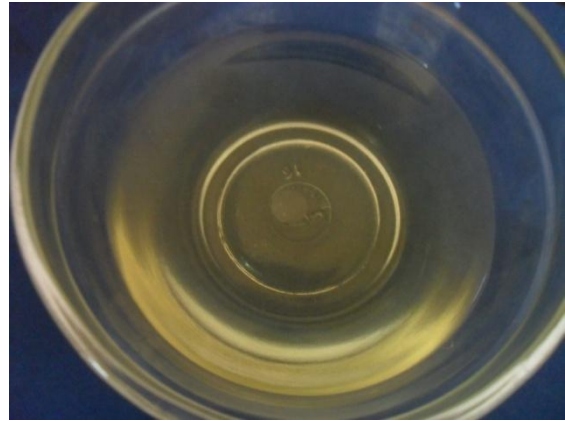
SHAPE: COIN



DAY- 1

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

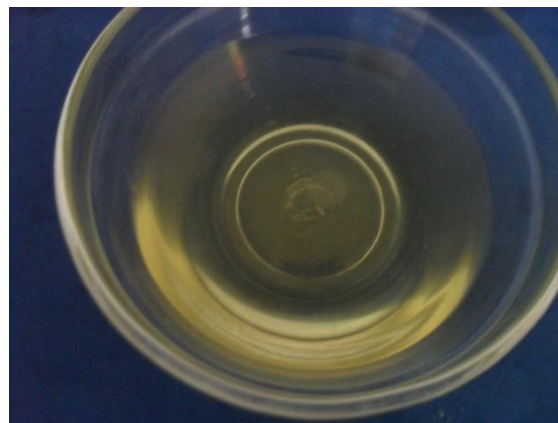
SHAPE: COIN



DAY- 3

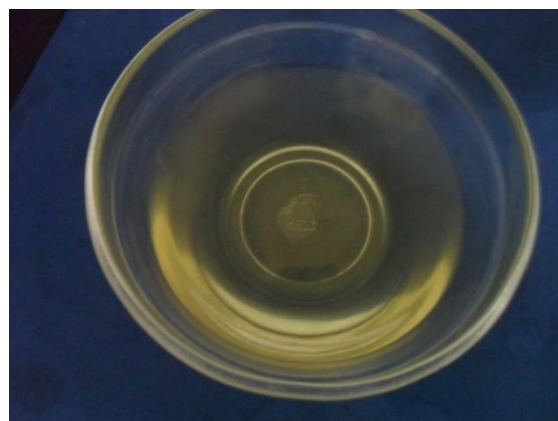
FIRST MINUTE

SHAPE: COIN



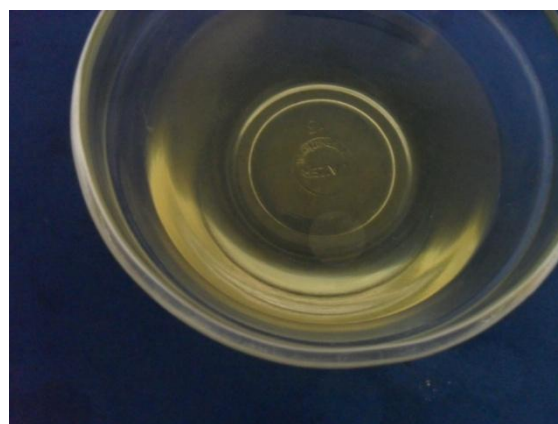
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



21. IP NO: 4081 39/F

DAY- 1

FIRST MINUTE

SHAPE: COIN



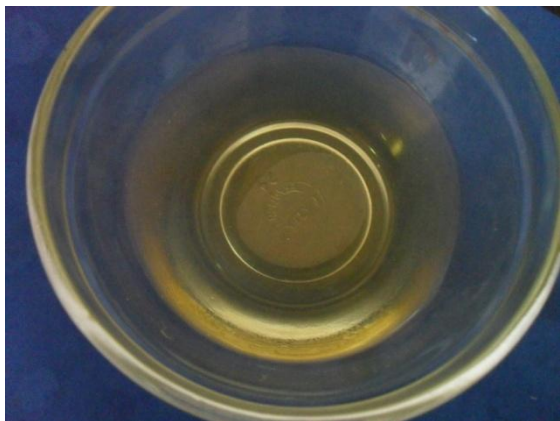
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

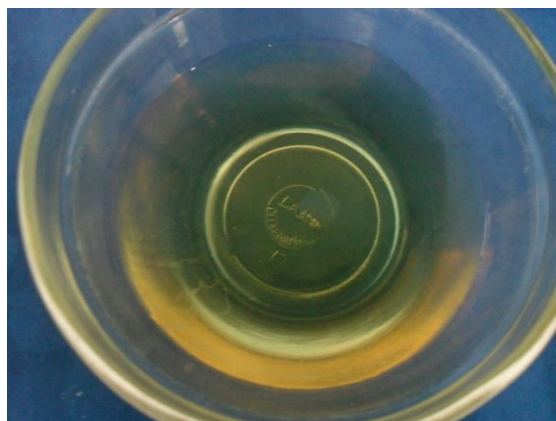
SHAPE: DISC



DAY- 2

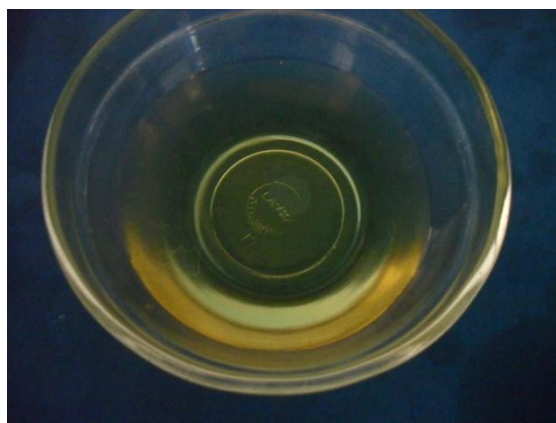
FIRST MINUTE

SHAPE: COIN



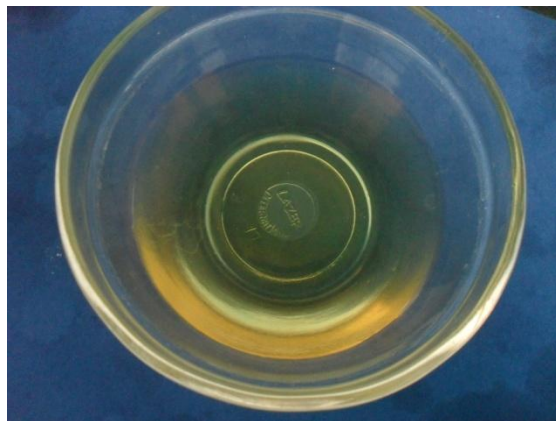
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN

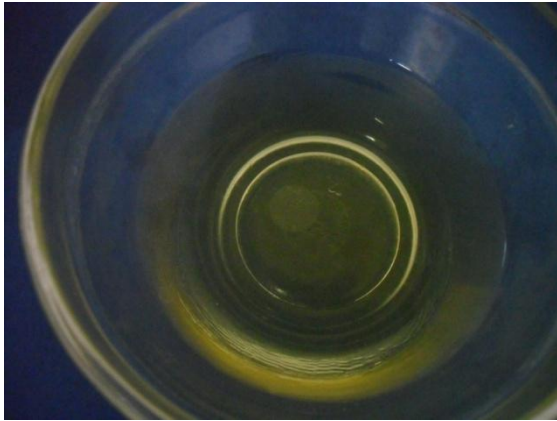


22. IP NO: 4136 54/F

DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

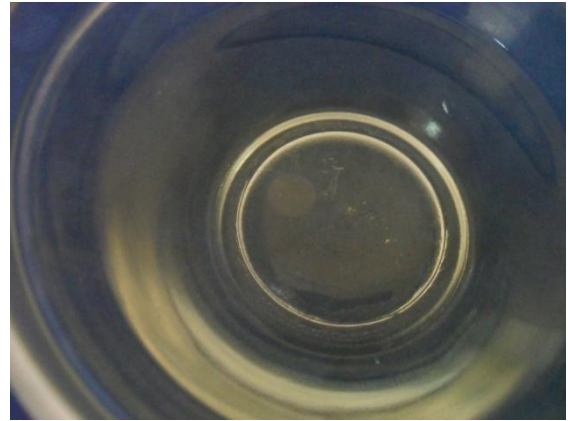
SHAPE: COIN



DAY- 1

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

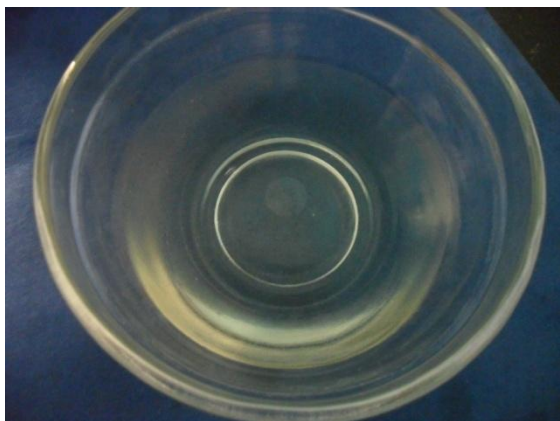
FIRST MINUTE

SHAPE: COIN



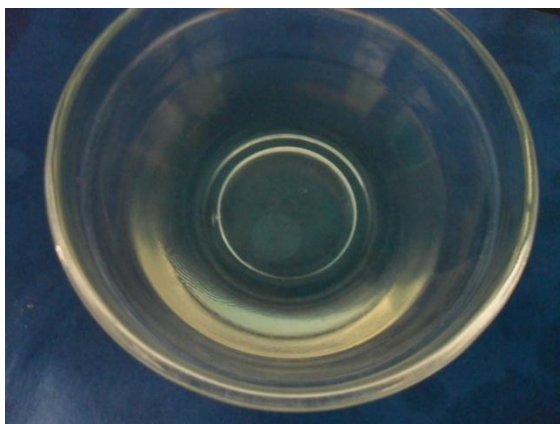
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 3

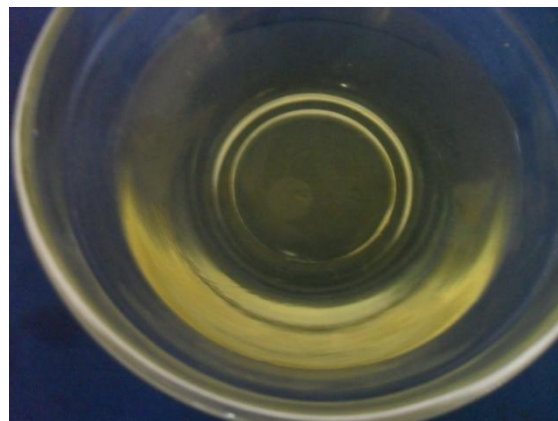
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



23. IP NO: 4111 39/F

DAY- 1

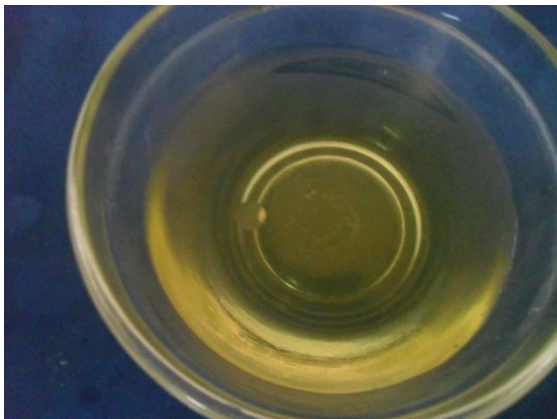
FIRST MINUTE

SHAPE: PEARL



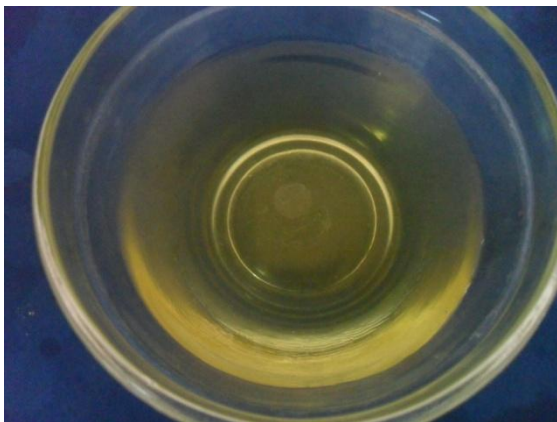
THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



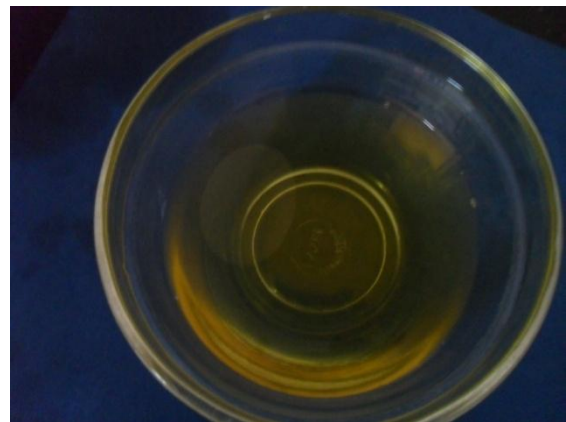
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: EGG

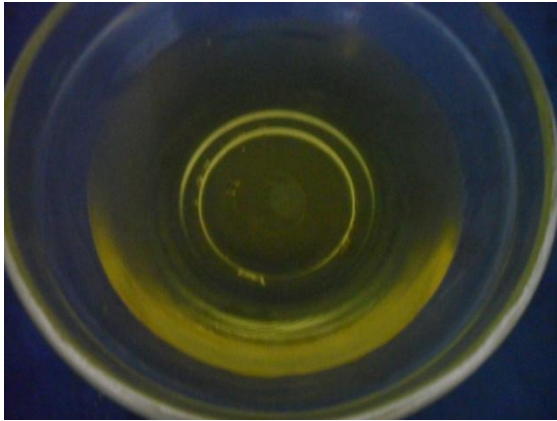


24. IP NO: 4081 35/F

DAY- 3

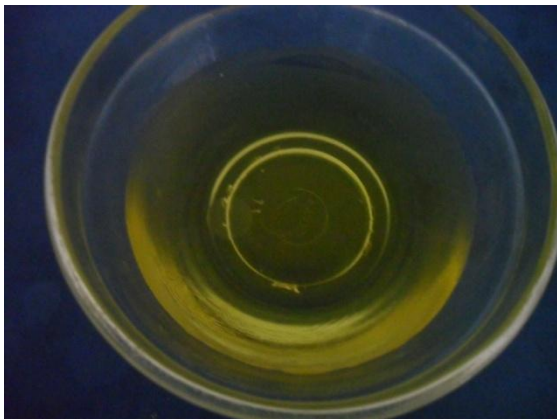
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

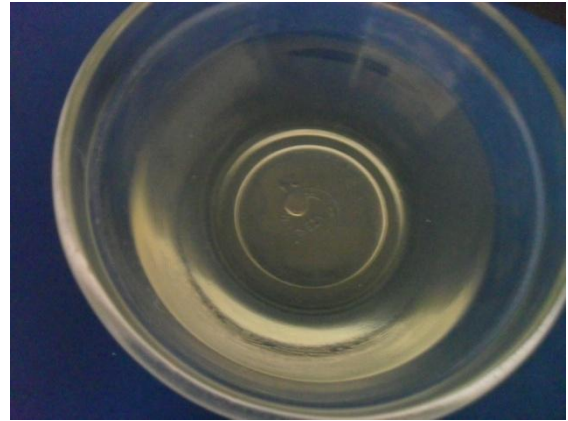
SHAPE: COIN



DAY- 1

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

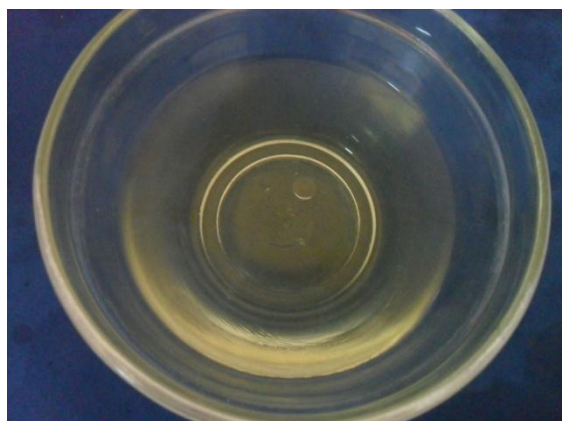
SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: PEARL

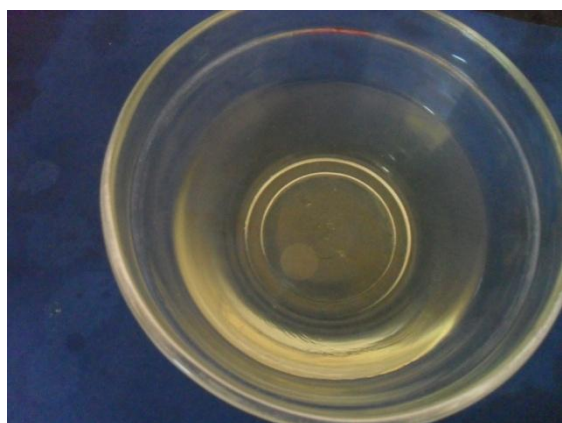


THIRD MINUTE

SHAPE: COIN



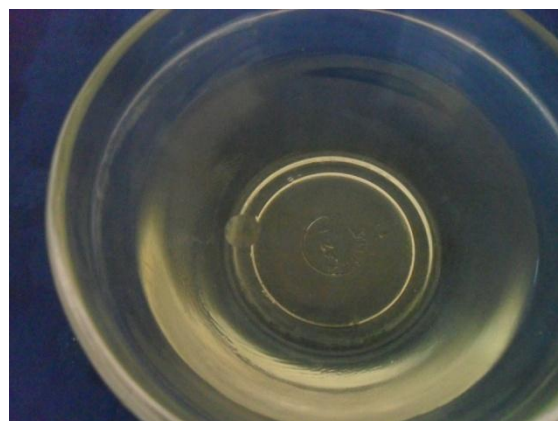
SEVENTH MINUTE SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN



25. IP NO: 4080 33/F

DAY- 1

FIRST MINUTE SHAPE: COIN



THIRD MINUTE SHAPE: COIN

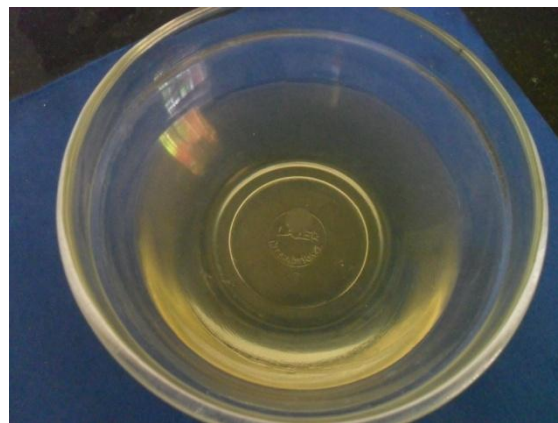


SEVENTH MINUTE SHAPE: COIN



DAY- 2

FIRST MINUTE SHAPE: PEARL



THIRD MINUTE SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN



26. IP NO: 4166 25/F

DAY- 3

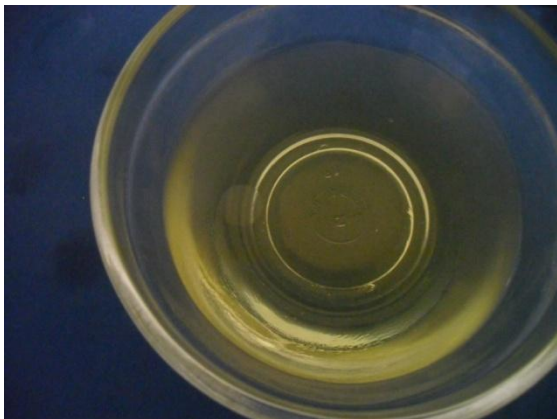
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



MINUTE 7

SHAPE: COIN



DAY- 1

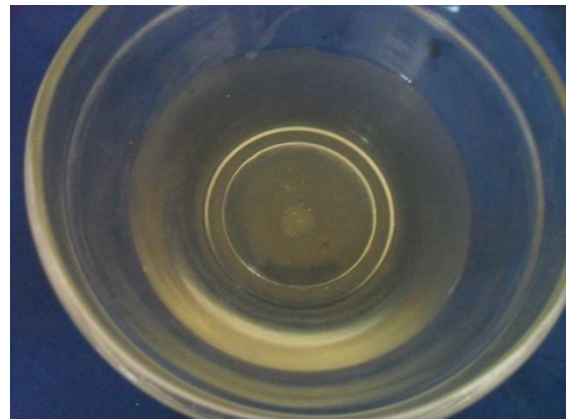
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

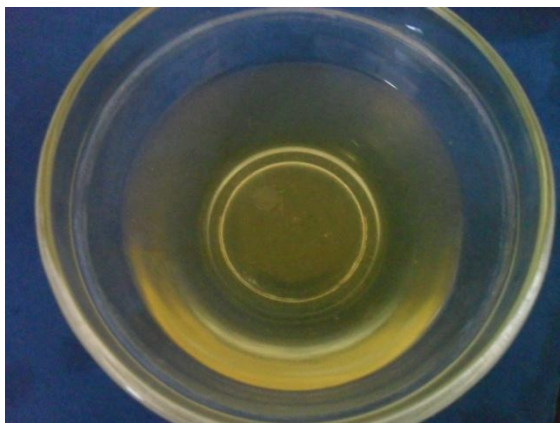
SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: PEARL

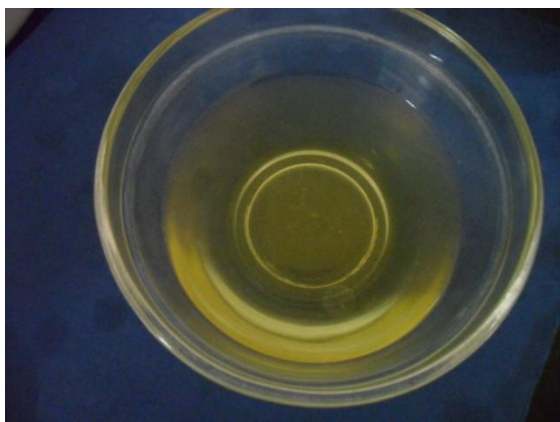


THIRD MINUTE

SHAPE: PEARL



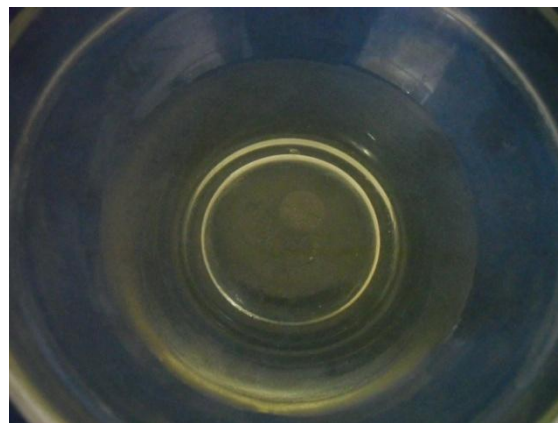
SEVENTH MINUTE SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: DISC



SEVENTH MINUTE SHAPE: DISC



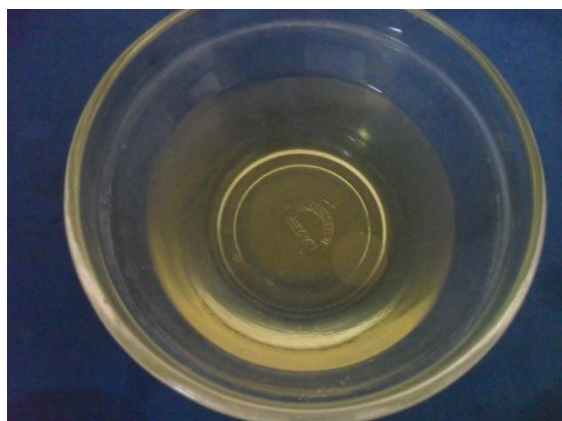
27. IP NO: 4173 46/F

DAY- 1

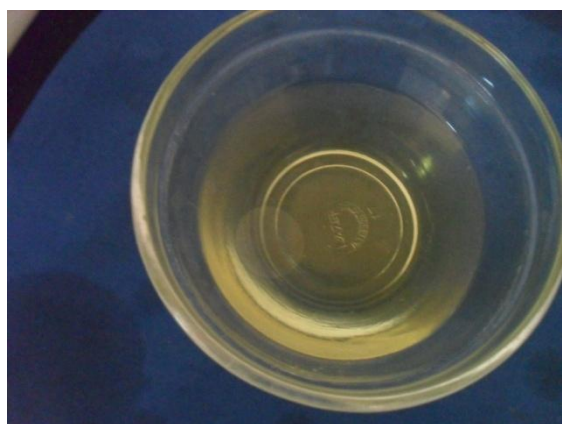
FIRST MINUTE SHAPE: COIN



THIRD MINUTE SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN

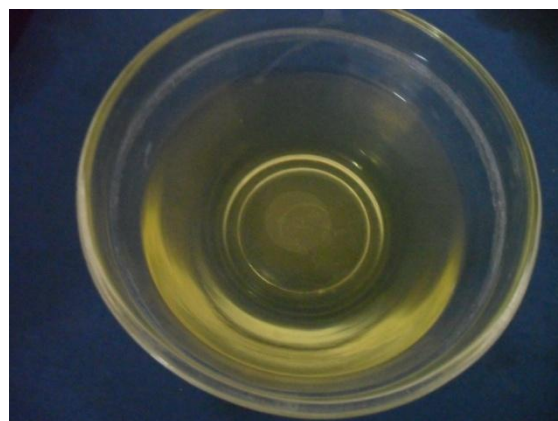


DAY- 2

FIRST MINUTE SHAPE: PEARL



THIRD MINUTE SHAPE: COIN



SEVENTH MINUTE SHAPE: DISC

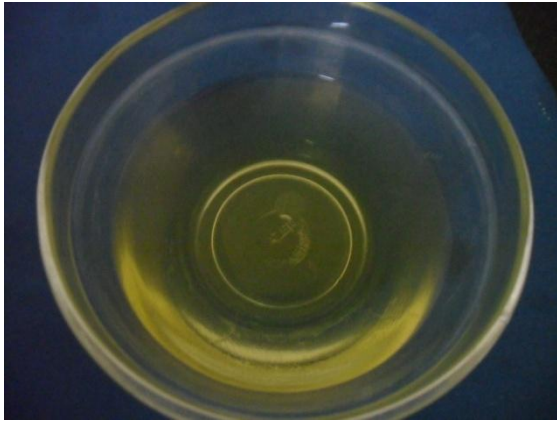


28. IP NO: 4183 53/F

DAY- 3

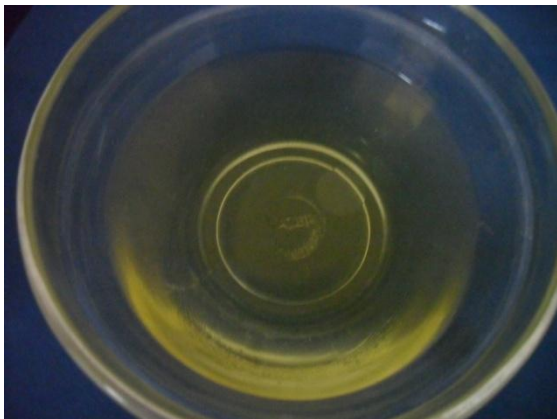
FIRST MINUTE

SHAPE: PEARL



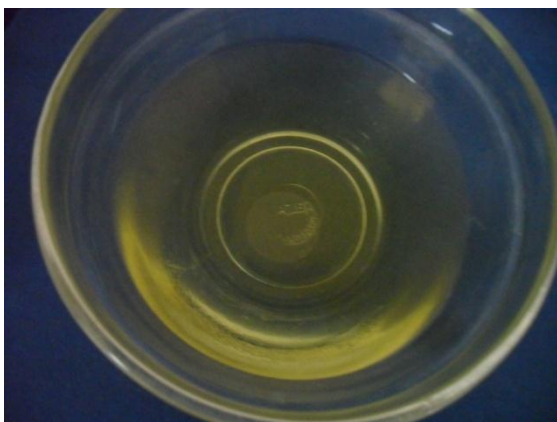
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 1

FIRST MINUTE

SHAPE: PEARL



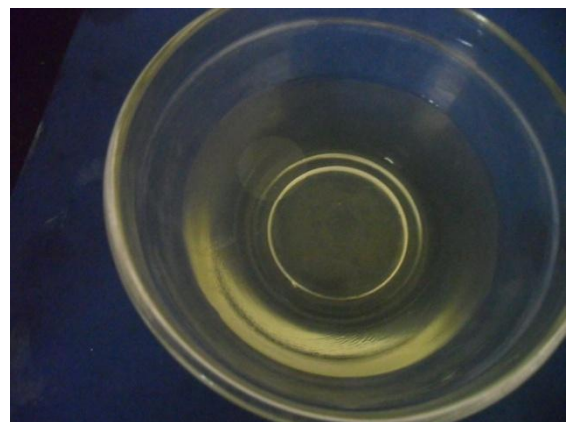
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

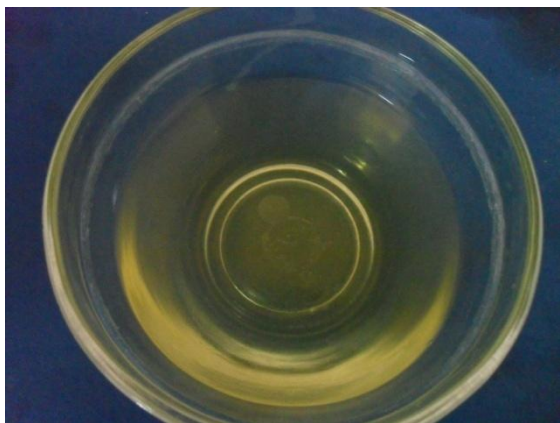
SHAPE: COIN



DAY- 2

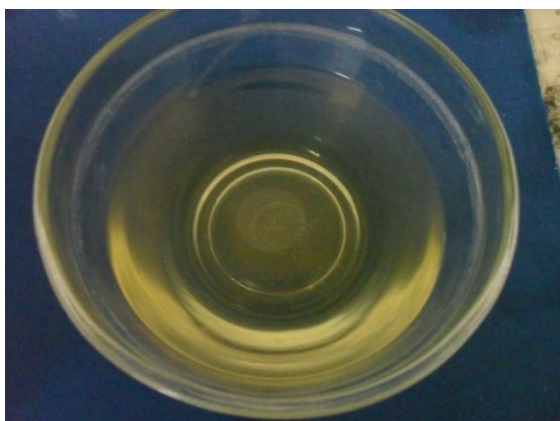
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: DISC



DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: DISC



SEVENTH MINUTE

SHAPE: DISC

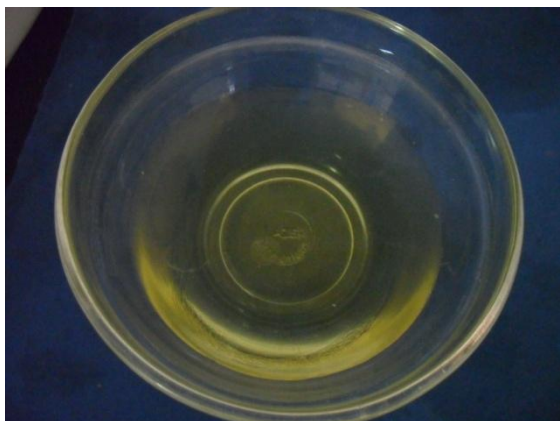


29. IP NO: 4098 40/F

DAY- 1

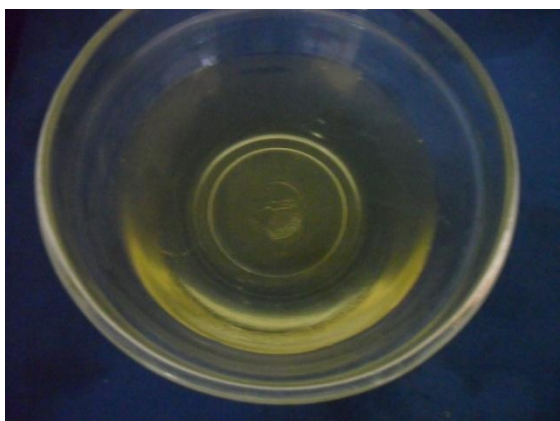
FIRST MINUTE

SHAPE: COIN



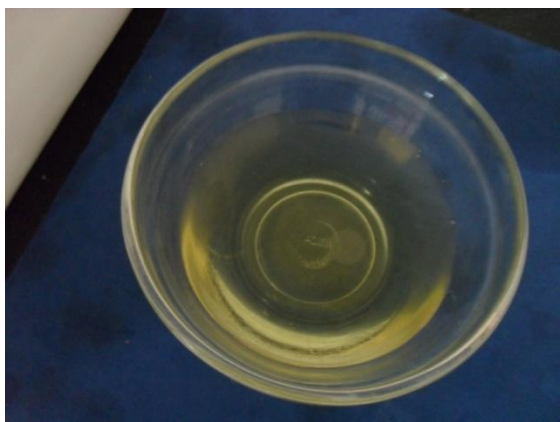
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

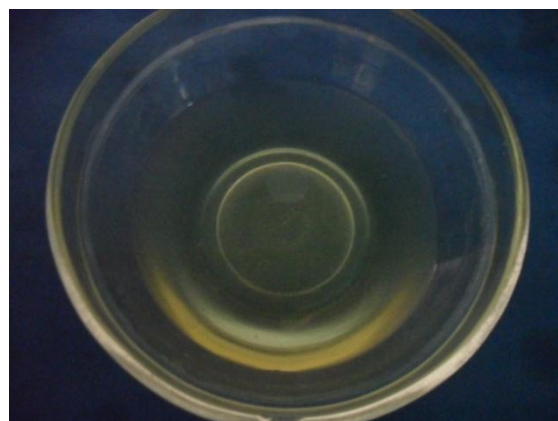
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN

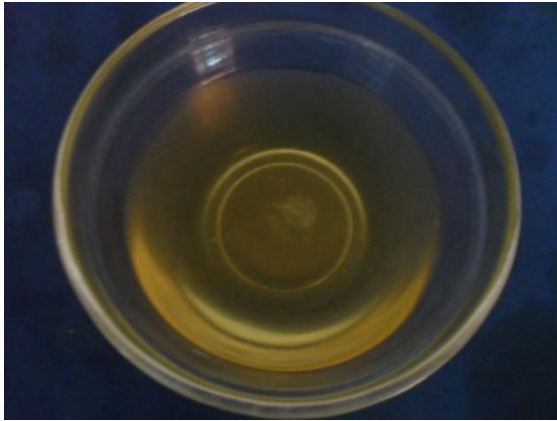


30. IP NO: 4179 57/F

DAY- 3

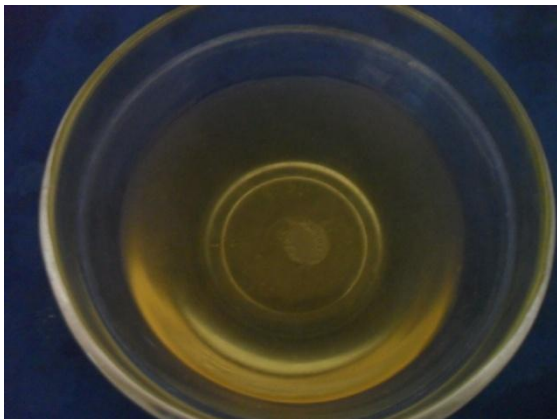
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

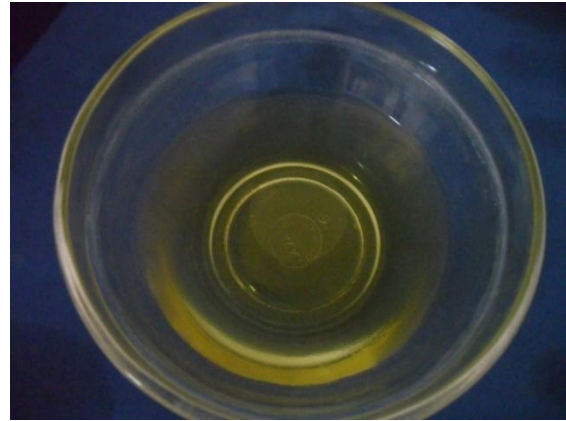
SHAPE: COIN



DAY- 1

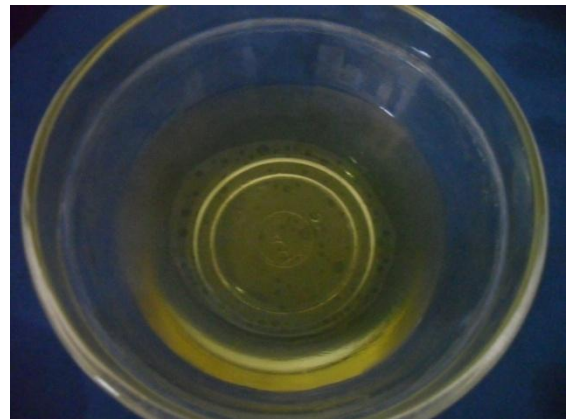
FIRST MINUTE

SHAPE: DISC



THIRD MINUTE

SHAPE: SIEVE



SEVENTH MINUTE

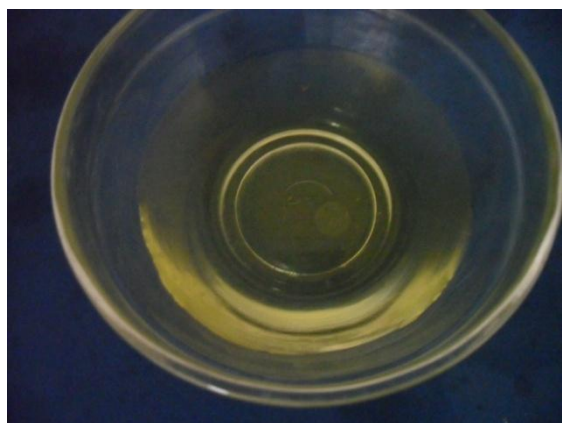
SHAPE: SIEVE



DAY- 2

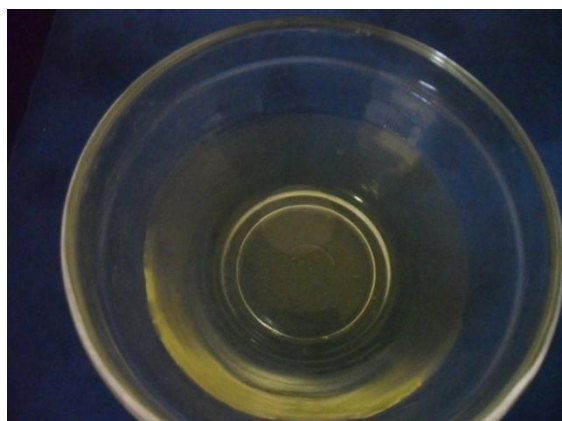
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 3

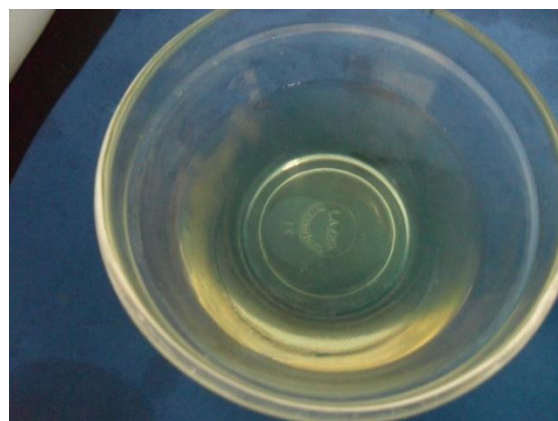
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN

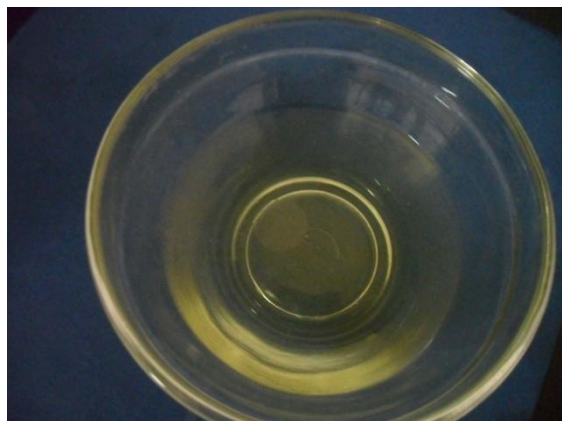


31. IP NO: 5118 47/M

DAY- 1

FIRST MINUTE

SHAPE: COIN



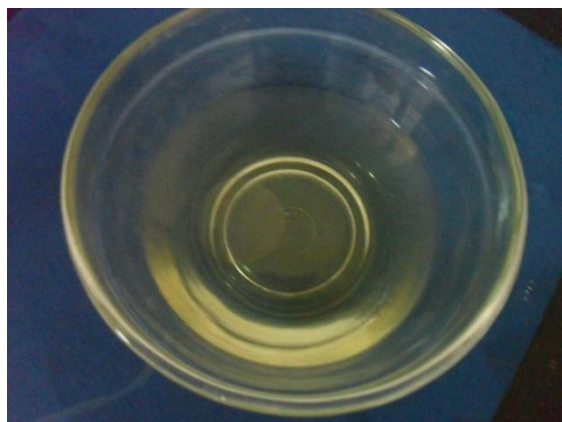
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



32. IP NO: 4249 50/F

DAY- 3

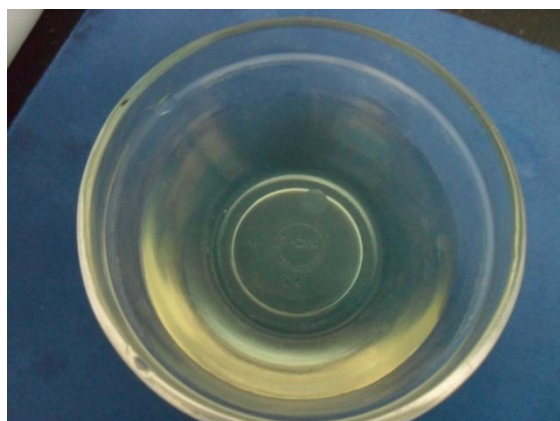
FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: PEARL



DAY- 1

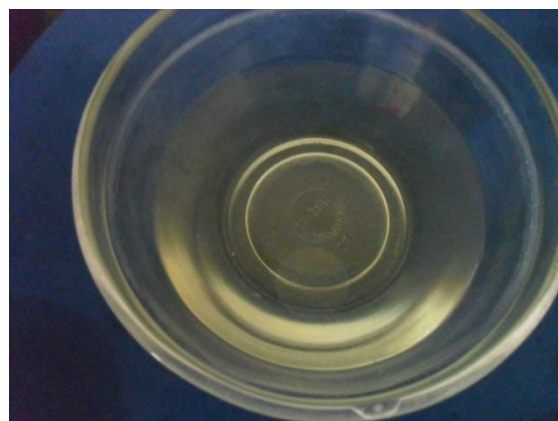
FIRST MINUTE

SHAPE: COIN



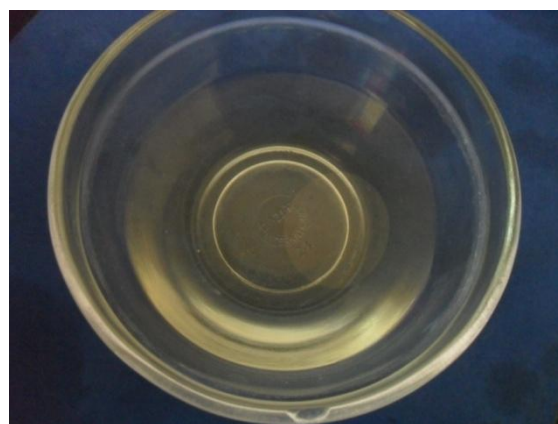
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

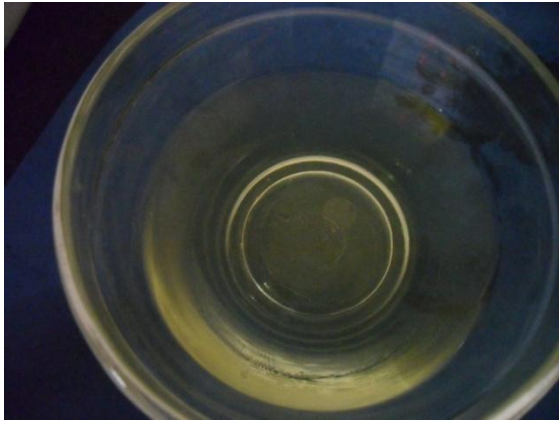
SHAPE: DISC



DAY- 2

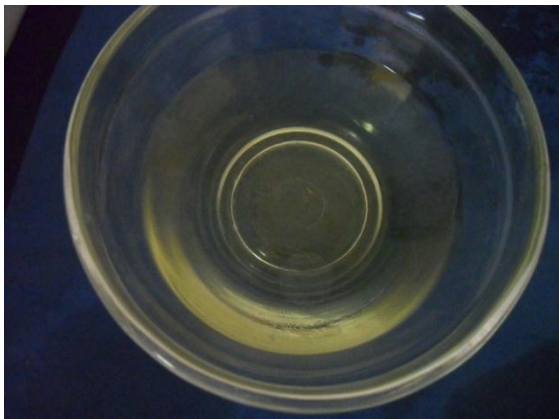
FIRST MINUTE

SHAPE: COIN



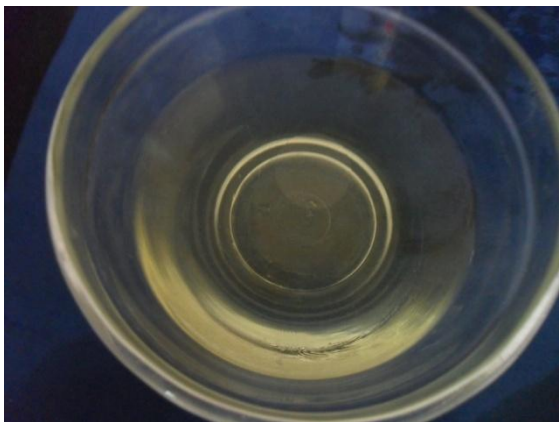
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 3

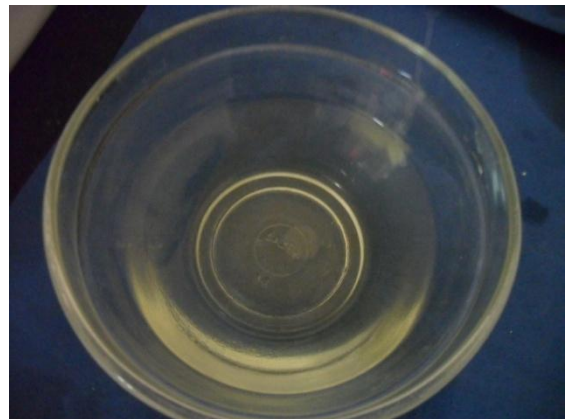
FIRST MINUTE

SHAPE: COIN



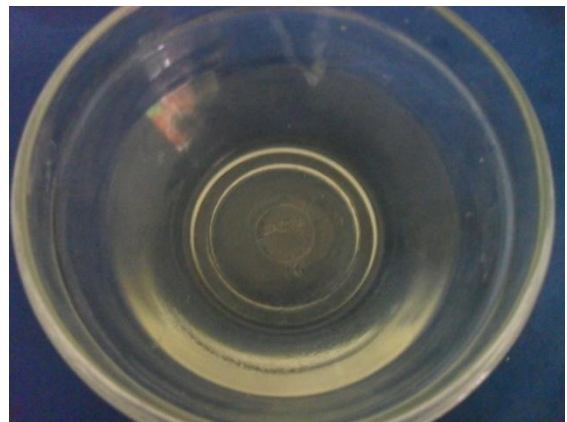
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



33 IP NO: 4253 37/F

DAY- 1

FIRST MINUTE

SHAPE: COIN



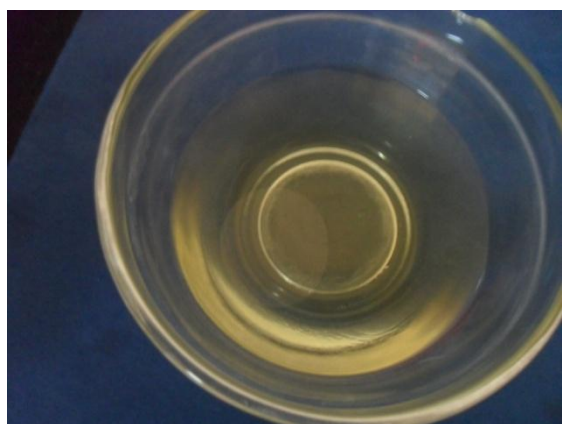
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: DISC



DAY- 2

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



34. IP NO: 4259 52/F

DAY- 3

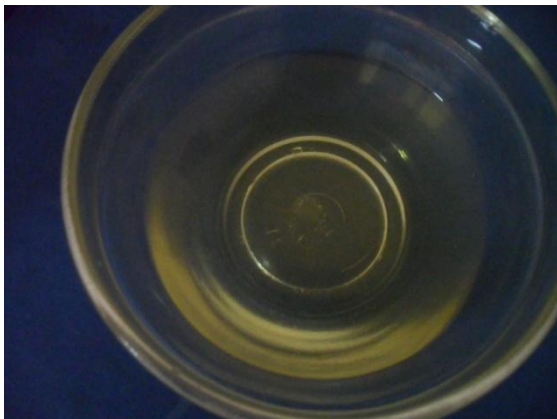
FIRST MINUTE

SHAPE:PEARL

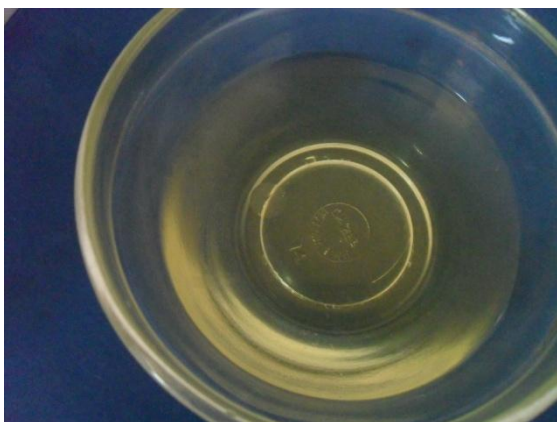


THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE SHAPE: COIN



DAY- 1

FIRST MINUTE

SHAPE: COIN

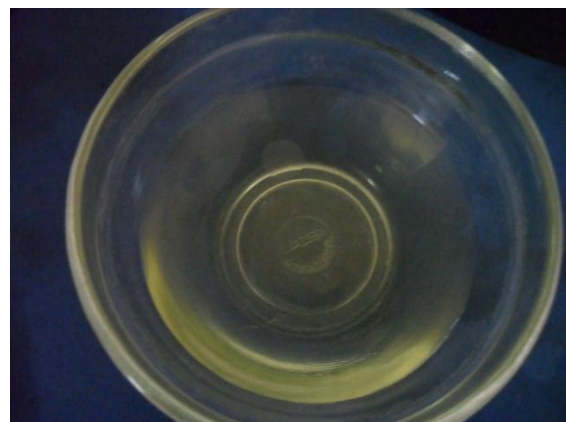


THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: COIN



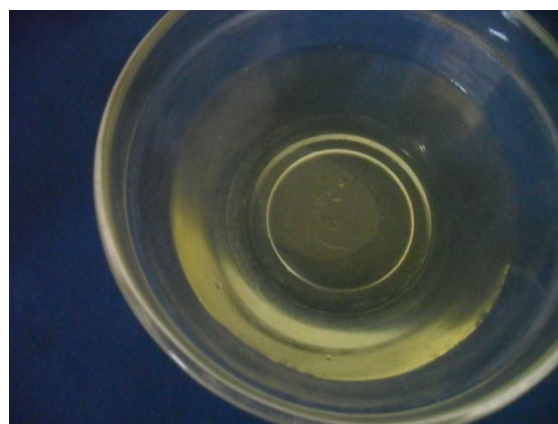
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: MITLER

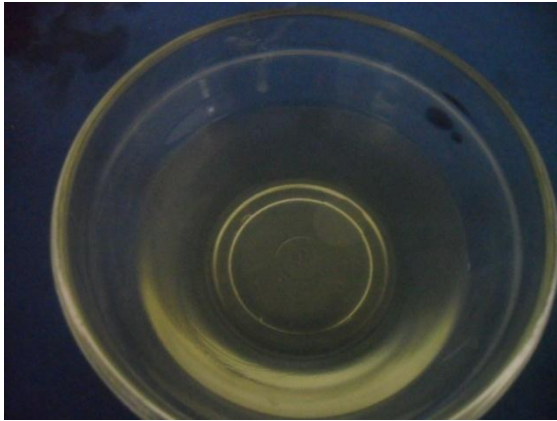


35. IP NO: 4302 42/F

DAY- 1

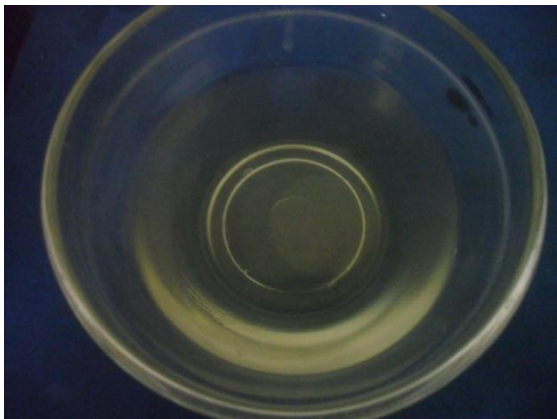
FIRST MINUTE

SHAPE: COIN



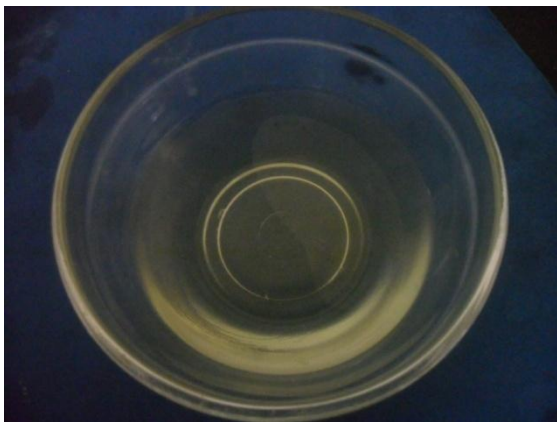
THIRD MINUTE

SHAPE: DISC



SEVENTH

SHAPE: **RECTANGLE**



DAY- 2

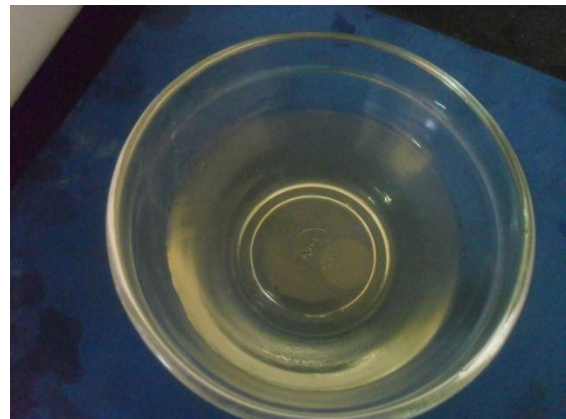
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: EGG



36. IP NO: 4298

DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 1

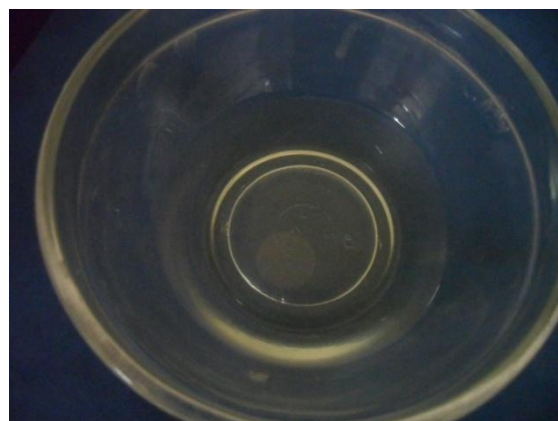
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



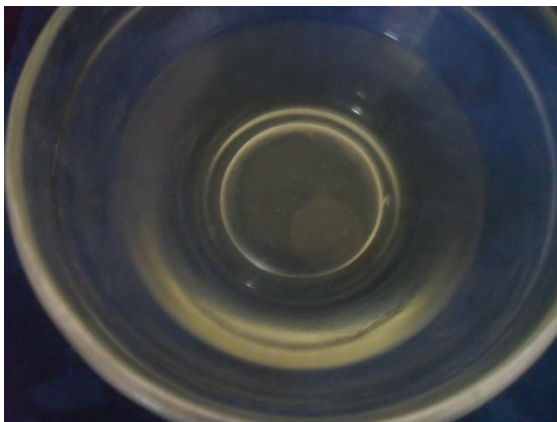
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: CIRCULAR



37.IP NO: 4289 50/F

DAY- 1

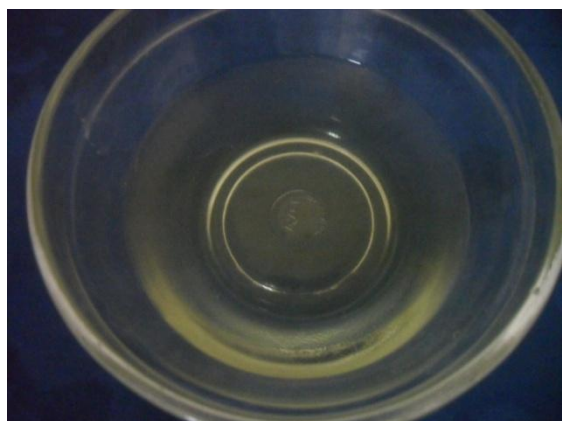
FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: PEARL



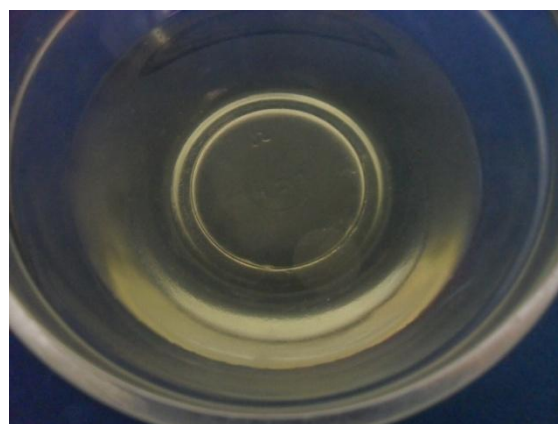
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN

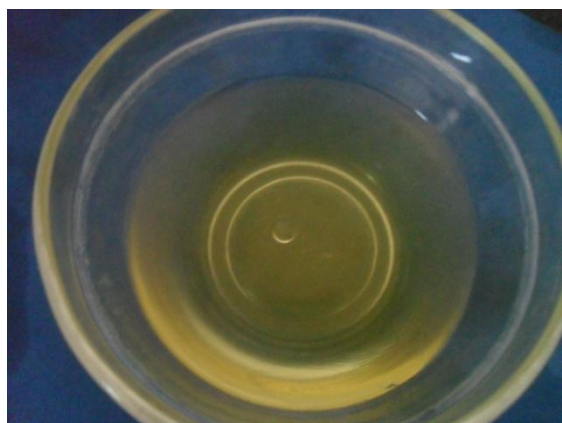


38. IP NO 5279 19/M:

DAY- 3

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

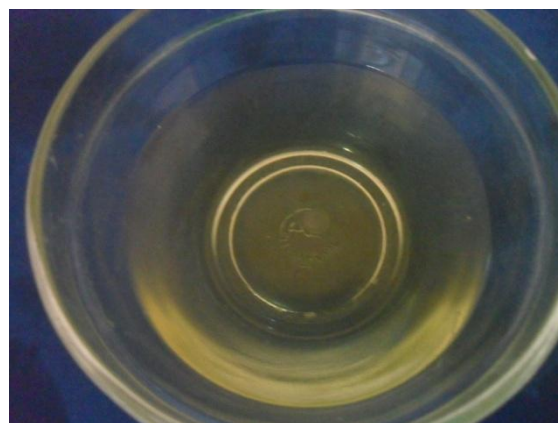
SHAPE: PEARL



DAY- 1

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

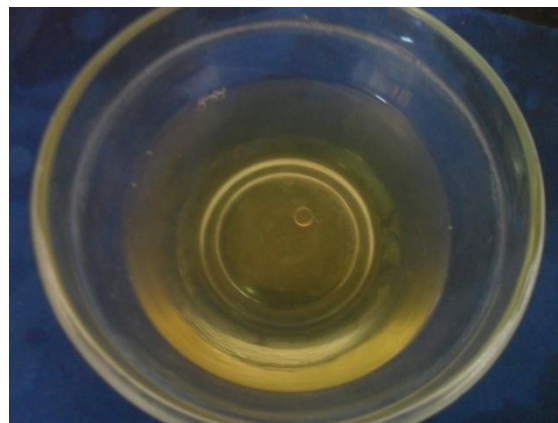
SHAPE: COIN



DAY- 3

FIRST MINUTE

SHAPE: PEARL



THIRD MINUTE

SHAPE: PEARL



SEVENTH MINUTE

SHAPE: PEARL

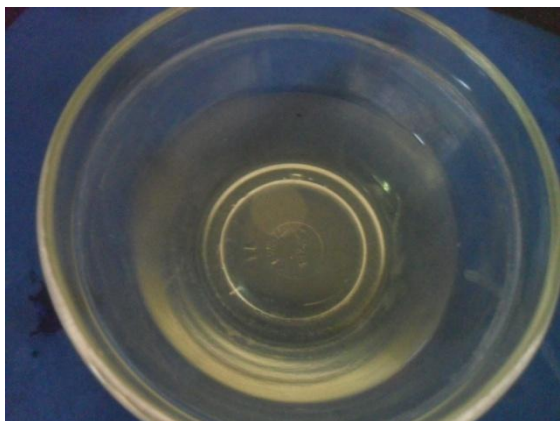


39. IP NO: 4359 42/F

DAY- 1

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: MITLER



SEVENTH

SHAPE: BUTTERFLY



DAY- 2

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH

SHAPE: RECTANGLE

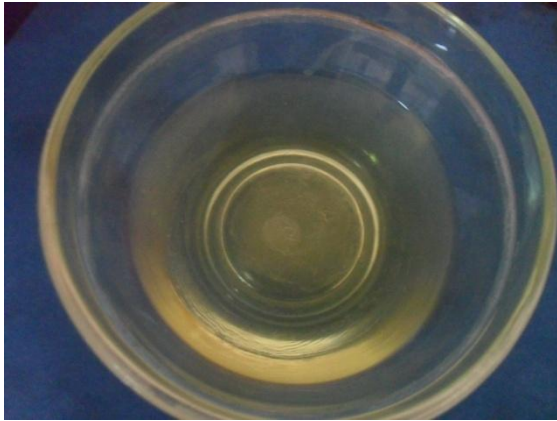


40. IP NO: 4379 52/F

DAY- 3

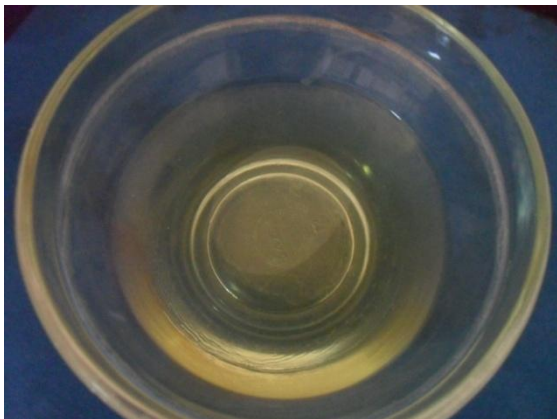
FIRST MINUTE

SHAPE: COIN



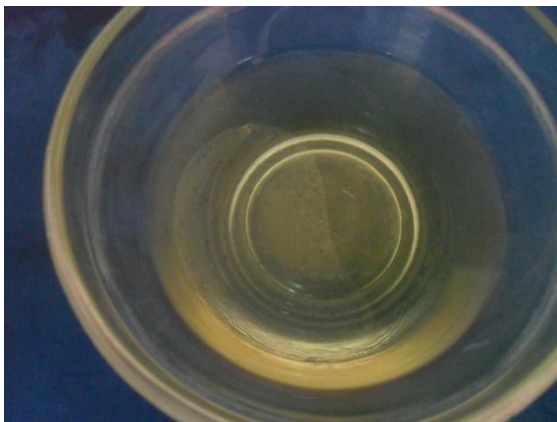
THIRD MINUTE

SHAPE: EGG



SEVENTH

SHAPE: RECTANGLE



DAY- 1

FIRST MINUTE

SHAPE: COIN



THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

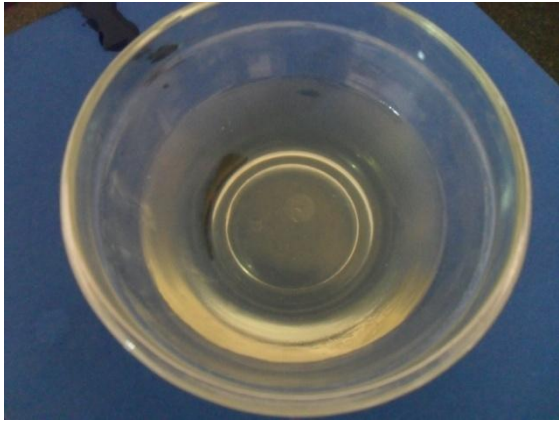
SHAPE: CIRCULAR



DAY- 2

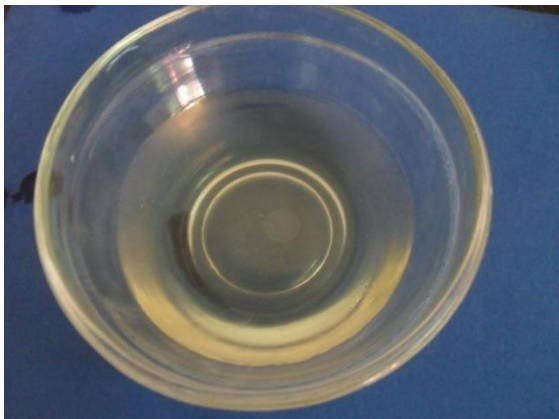
FIRST MINUTE

SHAPE: PEARL



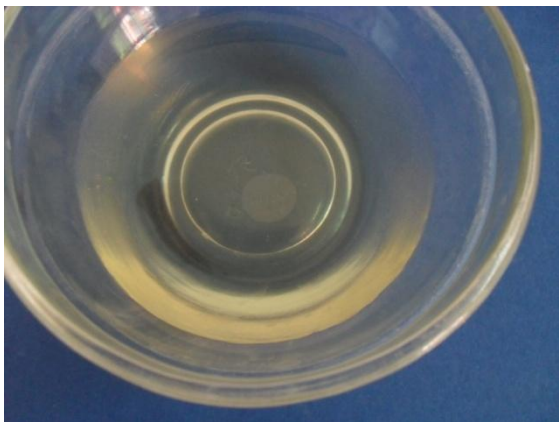
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

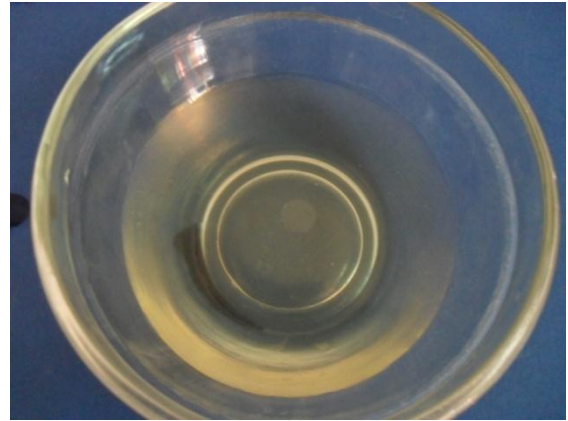
SHAPE: COIN



DAY- 3

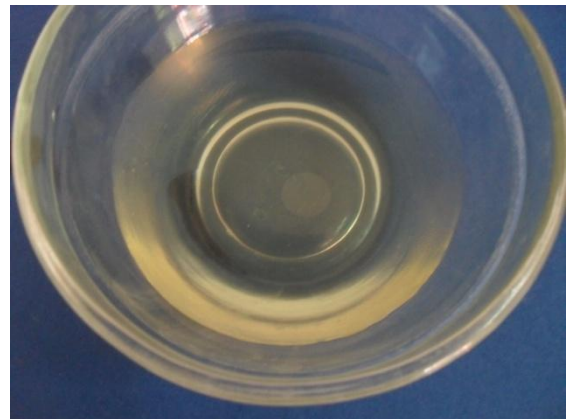
FIRST MINUTE

SHAPE: COIN



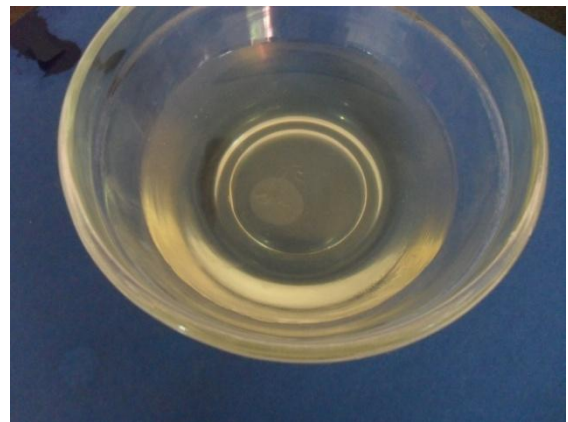
THIRD MINUTE

SHAPE: COIN



SEVENTH MINUTE

SHAPE: COIN



HEALTHY VOLUNTEERS

1.OPD NO: D19928 25/M

DAY - 1 : FIRST MINUTE

SHAPE: COIN



DAY - 2 : FIRST MINUTE

SHAPE: COIN



DAY - 1 : THIRD MINUTE

SHAPE: COIN



DAY - 2 : THIRD MINUTE

SHAPE : COIN



DAY - 1 : SEVENTH MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : CIRCULAR



2.OPD NO: D19929 60/M

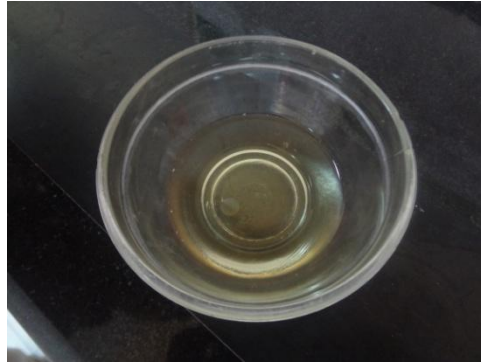
DAY - 3 :FIRST MINUTE

SHAPE : JASMINE BUD



DAY - 1 : FIRST MINUTE

SHAPE : COIN



DAY - 3 :3MINUTES

SHAPE : JASMINE BUD



DAY - 1 :THIRD MINUTE

SHAPE : COIN



DAY - 3 : 7MINUTES

SHAPE : LUTE



DAY - 1 : SEVENTH MINUTE

SHAPE : COIN



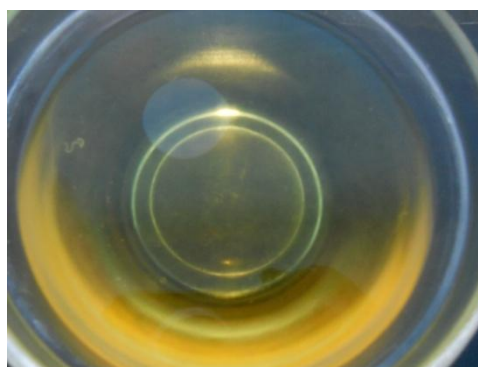
DAY - 2 : FIRST MINUTE

SHAPE : COIN



DAY - 3 :FIRST MINUTE

SHAPE : COIN



DAY - 2 :THIRD MINUTE

SHAPE : COIN



DAY - 3 :THIRD MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : COIN



DAY - 3 : SEVENTH MINUTE

SHAPE : COIN



3.OPD NO : D30224 30/M

DAY - 1 : FIRST MINUTE

SHAPE : COIN



DAY - 2 : FIRST MINUTE

SHAPE: COIN



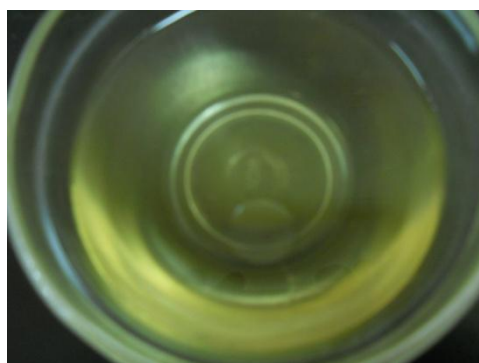
DAY - 1 :THIRD MINUTE

SHAPE : COIN



DAY - 2 : THIRD MINUTE

SHAPE : CIRCULAR



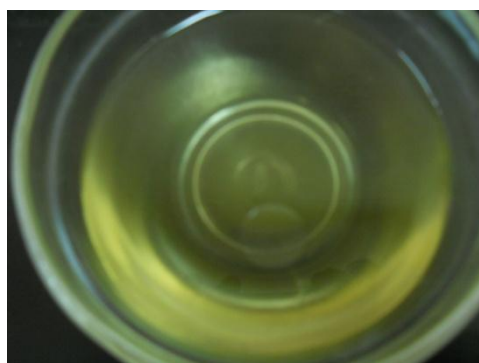
DAY - 1 : SEVENTH MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

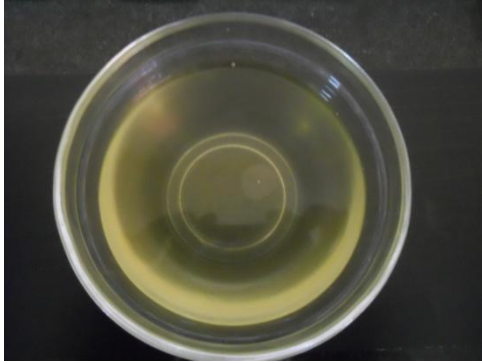
SHAPE : CIRCULAR



4.OPD NO : C 86813 27/M

DAY - 3 : 1 MINUTE

SHAPE : COIN



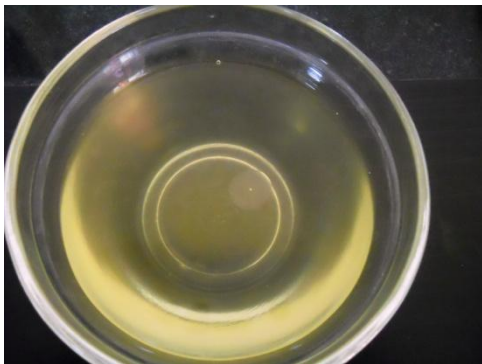
DAY - 1 : FIRST MINUTE

SHAPE : COIN



DAY - 3 : THIRD MINUTE

SHAPE : COIN



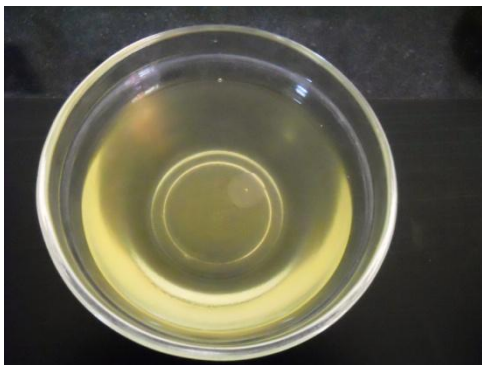
DAY - 1 : THIRD MINUTE

SHAPE : COIN



DAY - 3 : 7MINUTES

SHAPE : COIN



DAY - 1 : 7MINUTES

SHAPE : COIN



DAY - 2:1 MINUTE

SHAPE : COIN



DAY 3:1 MINUTE

SHAPE : COIN



DAY - 2 : 3MINUTES

SHAPE : COIN



DAY - 3 :THIRD MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : COIN



DAY - 3 :SEVENTH MINUTE

SHAPE : COIN



5. OPD NO : C72223 37/M

DAY - 1 : FIRST MINUTE

SHAPE: COIN



DAY - 2 : FIRST MINUTE

SHAPE: COIN



DAY - 1 : THIRD MINUTE

SHAPE: COIN



DAY - 2 : THIRD MINUTE

SHAPE : COIN



DAY - 1 : SEVENTH MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : CIRCULAR



6.O.P. NO: D15789 27/F

DAY - 3 : FIRST MINUTE

SHAPE : COIN



DAY - 1 : FIRST MINUTE

SHAPE : COIN



DAY - 3 :THIRD MINUTE

SHAPE : COIN



DAY - 1 : THIRD MINUTE

SHAPE : COIN



DAY - 3 : SEVENTH MINUTE

SHAPE : RING



DAY - 1 : SEVENTH MINUTE

SHAPE : COIN



DAY - 2 : FIRST MINUTE

SHAPE : COIN



DAY - 3 : FIRST MINUTE

SHAPE : COIN



DAY - 2 : THIRD MINUTE

SHAPE : COIN



DAY - 3 : THIRD MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : COIN



DAY - 3 : SEVENTH MINUTE

SHAPE : COIN



7. O.P.NO: D15797 24/ F

DAY - 1 : FIRST MINUTE

SHAPE : COIN



DAY - 2 : FIRST MINUTE

SHAPE : COIN



DAY - 1 : THIRD MINUTE

SHAPE : COIN



DAY2 : THIRD MINUTE

SHAPE : COIN



DAY - 1 : SEVENTH MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : COIN



8. O.P. NO: D13393 26/ F

DAY - 3 : FIRST MINUTE

SHAPE : COIN



DAY - 1 : FIRST MINUTE

SHAPE : COIN



DAY - 3 : THIRD MINUTE

SHAPE : COIN



DAY - 1 : THIRD MINUTE

SHAPE : COIN



DAY - 3 : SEVENTH MINUTE

SHAPE : JASMINE BUD



DAY - 1 : SEVENTH MINUTE

SHAPE : CIRCULAR



DAY - 2 : FIRST MINUTE

SHAPE : COIN



DAY - 3 : FIRST MINUTE

SHAPE : COIN



DAY - 2 : THIRD MINUTE

SHAPE : CIRCULAR



DAY - 3 : THIRD MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : OVAL



DAY 3: SEVENTH MINUTE

SHAPE : CIRCULAR



9. O.P. NO: C33345 38/M

DAY - 1 : 1

SHAPE : COIN



DAY - 1 : THIRD MINUTE

SHAPE : EGG



DAY - 1: SEVENTH MINUTE

SHAPE : CIRCULAR



DAY - 2 :1 MINUTES

SHAPE : COIN



DAY - 2 : THIRD MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : CIRCULAR



10.OPD NO: C33793 37/M

DAY - 3 : FIRST MINUTE
SHAPE : COIN



DAY - 1 : 1 MINUTES
SHAPE : COIN



DAY - 3 : THIRD MINUTE
SHAPE : EGG



DAY - 1 : THIRD MINUTE
SHAPE : COIN



DAY - 3 : SEVENTH MINUTE
SHAPE : RING



DAY - 1 : 7 MINUTES
SHAPE : CIRCULAR



DAY - 2 : FIRST MINUTE

SHAPE : COIN



DAY - 3 : FIRST MINUTE

SHAPE : COIN



DAY - 2 : THIRD MINUTE

SHAPE : CIRCULAR



DAY - 3 : THIRD MINUTE

SHAPE : COIN



DAY - 2 : SEVENTH MINUTE

SHAPE : CIRCULAR



DAY - 3 : SEVENTH MINUTE

SHAPE : CIRCULAR



9. DISCUSSION

In Siddha system of medicine Neerkkuri and Neikkuri are important diagnostic tools to elucidate the diagnosis and prognosis of disease. It is an excellent method to know the prognosis of the disease.

Out of the 80 cases screened, 40 diagnosed cases were selected from the inpatient department and 20 normal subjects were screened, 10 normal subjects will be selected from this study of Neerkkuri and Neikkuri, Urine analysis.

Many of cases affected (57.5%) in the study were of 31-50 yrs. As per Siddha text Senneer is affected which initiates Pitha humour.

In the study Females (87.5%) are more affected than Males. Though Uthira Vatha suronitham is a generally suppose to be a Vatha disorder in a initial stages, the suronitham which is the component of seven Udal Thathukal is most likely to be affected. This suronitham pertaining to be female sex. Explain the incidence of disease three times more in them.

Many of the cases had Pitham (35%) and Vathapitham(20%). Though Uthira Vatha suronitham is a Vatha disorder, blood is involved and affected in this disease. Blood is one of the Pitha components. Therefore, during pulse reading in many cases Pitha Nadi was predominantly felt.

In many of the cases, the colour of the urine observed were Pale yellow colour (75%, 72.5% and 72.5%) in three days. The colour obtained was normal.

Among 40 cases, the odour of the urine observed were aromatic odour (95%, 97.5% and 97.5%) in three days. The odour obtained was normal.

In many of the cases, the specific gravity of the urine observed was 1.010 – 1.020 in three days. The results obtained were normal.

In most of the cases, the froth is absent in the urine in three consecutive days. The result which is obtained was normal.

In most of the cases, the volume of the urine passed per day was 1100ml - 1500ml (95%, 97.5% and 87.5%). The result which is obtained was normal.

In most of the cases, the PH values (52.5%) of the urine observed were between 5.1- 6. The result which obtained was normal.

In many of the cases in the first day, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin (65%, 72.5% and 65%) and pearl (30%, 7.5% and 2.5%) shapes. In the second day, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin (55%, 80% and 57.5%) and pearl (35%, 7.5% and 5%) shapes.

In many of the cases in the third day, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin (67.5%, 70% and 62.5%) and pearl (27.5%, 15% and 12.5%) shapes. Blood is considered to be seat of Pitha humour and Kaba humour. According to Siddha literature, since there are symptoms of manifestations, this disorder placed under Vatha group of disease. But when considering the pathophysiology, it is the blood and suronitham (Female reproductive body constituent) which get affected for which reasons the humour, Pitham and Kabam where manifested in the Neikkuri examination and Nadi Naadi.

In many of the cases the dissemination dynamics of oil drop observed were slow spreading (87.5%, 87.5% and 90%) in consecutive three days. It indicates good prognosis. When more solutes are mixed in the urine, specific gravity tends to increase and surface tension is likely to decrease. When the urine is more diluted, the specific gravity decrease and surface tension leads to increase. Therefore, the oil drop is more likely to spread to fast.

The coin shaped Neikkuri appeared in first, third and seventh minutes were of 64%, 71%, and 59% respectively for RA positive patients. Coin shape appeared in first, third and seventh minutes were of 59%, 78%, and 66% respectively for RA negative patients. From the above study, it was clearly evident that coin shape appears in most of the RA positive and negative patients. Thus, the shape of the Neikkuri doesn't depend upon the RA factor.

The coin shape appeared in first, third and seventh minutes were of 65%, 72%, and 65% respectively for first day. The coin shape appeared in first, third and seventh minutes were of 55%, 80%, and 57% respectively for the second day. The coin shape appeared in first, third and seventh minutes were of 67%, 70%, and 62% respectively for third day. From the above study, it is clearly evident that there was no variation of Neikkuri shapes observed on the three consecutive days.

HEALTHY VOLUNTEERS:

In many of the cases, the colour of the urine observed was pale yellow colour (90%, 100% and 90%) in three days. The colour obtained was normal. In all of the cases, the odour of the urine observed was of aromatic odour (100%). The odour obtained was normal.

In many of the cases, the Specific gravity of the urine observed were of 1.010 – 1.020 in consecutive three days . The result obtained was normal. In many of the cases, the froth is absent in the urine. The result which is obtained was normal.

In all of the cases, the volumes of the urine passed per day were 1100ml - 1500ml(90%, 100% and 100%). In most of the cases, the PH of the urine observed was of below 6 (90%). The result which obtained was normal.

In most of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin (100%, 90% and 70%) and circular shapes. In many of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin (100%, 70% and 40%) and circular shapes(0%, 30% and 60%).

In many of the cases, the shape of the Neikkuri observed in first minute, third minute and seventh minute were of coin (90%, 80% and 40%) and circular shapes.

10. CONCLUSION

Uthiravatha suronitham is one of the Vatha disease propounded by Sage Yugi. It affects all the major and minor joints, which could be easily diagnosed by eight fold examination. Neerkkuri, Neikkuri are couple of the special diagnostic and prognostic tools to elucidate the disease Uthiravatha suronitham.

Based on the Neerkkuri examination done in this study, no specific association could be found out between the test results and diagnosis. There results were more of non-specific in character.

In many of the cases coin shaped Neikkuri was observed as finding, this showed the involvement of Pitham and Kabam humors in the pathogenesis of Uthiravatha suronitham. So, study recommendation could be made from the results of the study to choose drugs which good correct the vitiation in the above humors.

From the study, no association could be made between the chronicity, severity, sero positivity, deformity and shapes of the Neikkuri patterns observed; as there were no specific patterns of Neikkuri showed up in this study.

According to Siddha literature, predominant involvement of Kabam and Pitham humour is consider to be favourable prognostic factor. Here in this study, many patients had coin shaped Neikkuri which is a manifestation of Kabapitha involvement, those patients can be said to have a less severe course of diseases and amenability to treatment.

This study may throw new lights to Standardize the Neerkkuri and Neikkuri and provide a lead to carry out further researches in Neerkkuri and Neikkuri by the upcoming generation.

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PROFORMA

Form –I	SCREENING AND SELECTION PROFORMA
Form –IA	HISTORY PROFORMA
Form –II	CLINICAL ASSESSMENT
Form –III	LABORATORY INVESTIGATIONS
Form –IV	CONSENT FORM
Form –IV A	INFORMATION SHEET

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.

DEPARTMENT OF NOI NAADAL

**A STUDY ON NEERKKURI NEIKKURI DIAGNOSTIC
METHODOLOGY IN UTHIRAVATHASURONITHAM-
RHEUMATOID ARTHRITIS**

FORM I

SCREENING AND SELECTION PROFORMA

1. O.P.No _____ 2. I.P No _____ 3. Bed No: _____ 4. S.No: _____

5. Name: _____ 6. Age (years): _____ 7. Gender: M ☐ F ☐

8. Occupation: _____ 9. Income: _____

10. Address: _____

11. Contact No: _____

12. E-mail : _____

INCLUSION CRITERIA

YES

NO

- | | | |
|--|--------------------------|--------------------------|
| • Age: 18- 60 years both sex | <input type="checkbox"/> | <input type="checkbox"/> |
| • Pain in the knee joint, ankle joint and inter phalangeal
joints of the body | <input type="checkbox"/> | <input type="checkbox"/> |
| • Swelling of the knee joint, ankle joint and inter phalangeal
joints of the body | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | |
|---|--------------------------|--------------------------|
| • Loss of appetite | <input type="checkbox"/> | <input type="checkbox"/> |
| • Patient who are willing to give blood and
Urine samples for laboratory investigation | <input type="checkbox"/> | <input type="checkbox"/> |

EXCLUSION CRITERIA:

- | | YES | NO |
|--|--------------------------|--------------------------|
| • Major systemic illness | <input type="checkbox"/> | <input type="checkbox"/> |
| • Vulnerable group | <input type="checkbox"/> | <input type="checkbox"/> |
| • Complication of rheumatoid arthritis
other than joint involvement | <input type="checkbox"/> | <input type="checkbox"/> |

Date :

Signature of Investigator

Signature of Lecturer:

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.

DEPARTMENT OF NOI NAADAL

**A STUDY ON NEERKKURI NEIKKURI
DIAGNOSTIC METHODOLOGY IN
UTHIRAVATHASURONITHAM- RHEUMATOID
ARTHRITIS**

**FORM I-A
HISTORY PROFORMA**

1. Sl.No of the case: _____

2. Name: _____ Height: _____ cms Weight: _____ Kg

3. Age (years): _____ DOB

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--	--

--	--	--	--

D D M M Y E A R

4. Educational Status:

1) Illiterate ☐ 2) Literate ☐ 3) Student ☐ 4) Graduate/Postgraduate ☐

5. Nature of work:

- 1) Sedentary work ☐
- 2) Field work with physical labour ☐
- 3) Field work Executive ☐

6. Complaints and Duration:

7. History of present illness:

8. History of Past illness:

	Yes	No	
Systemic hypertension	<input type="checkbox"/>	<input type="checkbox"/>	
Diabetes mellitus	<input type="checkbox"/>	<input type="checkbox"/>	
Ischemic heart disease	<input type="checkbox"/>	<input type="checkbox"/>	
Dyslipidaemia	<input type="checkbox"/>	<input type="checkbox"/>	
Jaundice	<input type="checkbox"/>	<input type="checkbox"/>	
Seizures	<input type="checkbox"/>	<input type="checkbox"/>	
Bronchial asthma	<input type="checkbox"/>	<input type="checkbox"/>	
Any drug allergy	<input type="checkbox"/>	<input type="checkbox"/>
Any surgeries	<input type="checkbox"/>	<input type="checkbox"/>
Any other major illnesses	<input type="checkbox"/>	<input type="checkbox"/>
Trauma	<input type="checkbox"/>	<input type="checkbox"/>

9. Habits :

	Yes	No
Smoker	<input type="checkbox"/>	<input type="checkbox"/>
Alcoholic	<input type="checkbox"/>	<input type="checkbox"/>
Drug Addiction	<input type="checkbox"/>	<input type="checkbox"/>
Betel nut chewer:	<input type="checkbox"/>	<input type="checkbox"/>
Tea	<input type="checkbox"/>	<input type="checkbox"/>
Coffee	<input type="checkbox"/>	<input type="checkbox"/>

Type of diet ☐ V ☐ NV ☐ M

10. Personal history:

Marital status: Married ☐ Unmarried ☐

No. of children: Male: _____ Female: _____

11. Family history:

History of..... Father ☐ Mother ☐

History of..... Father ☐ Mother ☐

Others

6. Menstrual & Obstetric history:

Age at menarche _____ years

Gravidity ☐ Parity ☐

Duration of the menstrual cycle

Constancy of cycle duration: 1.Regular ☐ 2.Irregular ☐

7. GENERAL ETIOLOGY FOR UTHIRAVATHASURONITHAM:

	YES	NO
Increased intake of sour taste	<input type="checkbox"/>	<input type="checkbox"/>
Increased intake of astringent taste	<input type="checkbox"/>	<input type="checkbox"/>
Increased intake of bitter taste	<input type="checkbox"/>	<input type="checkbox"/>
Increased intake of hot and spicy foods	<input type="checkbox"/>	<input type="checkbox"/>
Increased intake of old cooked rice	<input type="checkbox"/>	<input type="checkbox"/>
Increased intake of ragi	<input type="checkbox"/>	<input type="checkbox"/>

Increased intake of ghee	<input type="checkbox"/>	<input type="checkbox"/>
Prolonged constipation	<input type="checkbox"/>	<input type="checkbox"/>
Altered dietary any timings	<input type="checkbox"/>	<input type="checkbox"/>
Increased intake of water	<input type="checkbox"/>	<input type="checkbox"/>
Increased anger	<input type="checkbox"/>	<input type="checkbox"/>
Fear	<input type="checkbox"/>	<input type="checkbox"/>
Sadness	<input type="checkbox"/>	<input type="checkbox"/>
Running fast	<input type="checkbox"/>	<input type="checkbox"/>
Day slumber and staying back at night	<input type="checkbox"/>	<input type="checkbox"/>

Date :

Signature of Lecturer:

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

DEPARTMENT OF NOI NAADAL

**A STUDY ON NEERKKURI NEIKKURI DIAGNOSTIC
METHODOLOGY IN UTHIRAVATHASURONITHAM-
RHEUMATOID ARTHRITIS**

**FORM II
CLINICAL ASSESSMENT**

1. Serial No: _____

2. Name: _____

3. Date of birth:

--	--

--	--

--	--	--	--

D D M M Y E A R

4. Age: _____ years

5. Date: _____

GENERAL EXAMINATION:

1. Pallor:

2. Icterus:

3. Cyanosis:

4. Lymphadenopathy:

5. Pedal edema:

6. Clubbing:

7. Jugular vein pulsation:

8. Temperature (°F):

9. Pulse rate:

10. Heart rate:

11. Respiratory rate:

12. Blood pressure:

13. Height: _____ cms.

14. Weight (kg): BMI _____ (Weight Kg/ Height m²)

VITAL ORGANS EXAMINATION

	1. Normal	2. Affected
1. Heart	<input type="checkbox"/>	<input type="checkbox"/> _____
2. Lungs	<input type="checkbox"/>	<input type="checkbox"/> _____
3. Brain	<input type="checkbox"/>	<input type="checkbox"/> _____
4. Liver	<input type="checkbox"/>	<input type="checkbox"/> _____
5. Kidney	<input type="checkbox"/>	<input type="checkbox"/> _____
6. Spleen	<input type="checkbox"/>	<input type="checkbox"/> _____
7. Stomach	<input type="checkbox"/>	<input type="checkbox"/> _____

SYSTEMIC EXAMINATION:

1. Cardio Vascular System _____
2. Respiratory System _____
3. Gastrointestinal System _____
4. Central Nervous System _____
5. Uro genital System _____
6. Endocrine System _____
7. Musculoskeletal system _____

SIDDHA SYSTEM OF EXAMINATION

[1] ENVAGAI THERVU [EIGHT-FOLD EXAMINATION]

I. NAADI (KAI KURI) (RADIAL PULSE READING)

(a) Naadi Nithanam (Pulse Appraisal)

1. Kalam (Pulse reading season)

Perumpozhuthu:

1. Kaarkaalam
(Rainy season) ☐

2. Koothirkaalam
(Autumn) ☐

3. Munpanikaala
(Early winter) ☐

4. Pinpanikaalam
(Late winter) ☐

5. Ilavenirkaalan
(Early summer) ☐

6. Muthuvenirkaala
(Late summer) ☐

Sirupozhuthu:

1. . Kaalai ☐ 2. Mathiyam ☐ 3. . Maalai ☐

4. Erpaadu ☐ 5. Iravu ☐ 6. Vaikarai ☐

2. Desam (Climate of the patient's habitat):

1. Kulir
(Temperate) ☐ 2. Veppam
(Hot) ☐

3. Vayathu (Age) : 1. 1-33yrs ☐ 2. 34-66yrs ☐ 3. 67-100 ☐

4. Udal Vanmai (General body condition)

1. Iyyalbu
(Normal built) ☐ 3. Valivu
(Robust) ☐ 4. Melivu
(Lean) ☐

(b) Naadi nadai (Pulse Play)

1. Vanmai (Expansile Nature)

- | | | | | |
|----------|--------|--------------------------|--------|--------------------------|
| 1.Vatham | Vanmai | <input type="checkbox"/> | Menmai | <input type="checkbox"/> |
| 2.Pitham | Vanmai | <input type="checkbox"/> | Menmai | <input type="checkbox"/> |
| 3.Kabam | Vanmai | <input type="checkbox"/> | Menmai | <input type="checkbox"/> |

2. Panbu (Habit)

- | | | | | | |
|------------------------------|--------------------------|-------------------------------|--------------------------|-----------------------------|--------------------------|
| 1. Thannadai
(Playing in) | <input type="checkbox"/> | 2. Puranadai
(Playing out) | <input type="checkbox"/> | 3. Illaitthal
(Feeble) | <input type="checkbox"/> |
| 4. Kathithal
(Swelling) | <input type="checkbox"/> | 5. Kuthithal
(Jumping) | <input type="checkbox"/> | 6. Thullal
(Frisking) | <input type="checkbox"/> |
| 7. Azhutthal
(ducking) | <input type="checkbox"/> | 8. Padutthal
(Lying) | <input type="checkbox"/> | 9. Kalatthal
(Blending) | <input type="checkbox"/> |
| 10. Munnokku
(Advancing) | <input type="checkbox"/> | 11. Pinnokku
(Flinching) | <input type="checkbox"/> | 12. Suzhalal
(Revolving) | <input type="checkbox"/> |
| 13. Pakkamnokk
(Swerving) | <input type="checkbox"/> | | | | |

3. Naadi nadai

- | | | | | | |
|---------------|--------------------------|----------------|--------------------------|---------------|--------------------------|
| 1. Vali | <input type="checkbox"/> | 2. Azhal | <input type="checkbox"/> | 3. Iyyam | <input type="checkbox"/> |
| 4. Vali Azhal | <input type="checkbox"/> | 5. Azhal Vali | <input type="checkbox"/> | 6. Iyya Vali | <input type="checkbox"/> |
| 7. Vali Iyyam | <input type="checkbox"/> | 8. Azhal Iyyam | <input type="checkbox"/> | 9. Iyya Azhal | <input type="checkbox"/> |

Any Other Findings _____

II. NAA (TONGUE)

1. Maa Padinthuruthal: 1. Absent ☐ 2. Present ☐ _____
(Coatedness)
2. Niram (Colour) 1. Sivappu (Red) ☐ 2. Manjal (Yellow) ☐
3. Velluppu (Pale) ☐ 4. Karuppu (Dark) ☐
- Others _____

3. Suvai (Taste sensation) 1. Pulippu (Sour) ☐ 2. Kaippu (Bitter) ☐ 3. Inippu (Sweet) ☐
4. Vedippu (Fissure) 1. Present ☐ 2. Absent ☐
5. Vai neer ooral (Salivation) 1. Normal ☐ 2. Increased ☐ 3. Reduced ☐

Any Other Findings _____

III. NIRAM (COMPLEXION)

1. Karuppu (Dark-Vatham) ☐ 2. Manjal (Yellowish-Pitham) ☐
3. Velluppu (Fair-Kabam) ☐ 4. Thontham ☐

Any Other Findings _____

IV. MOZHI (VOICE)

1. Sama oli (Medium pitched-Vatham) ☐ 2. Urattha oli (High pitched-Pitham) ☐
3. Thazhantha oli (Low pitched-Kabam) ☐ 4. Thontham ☐

Any Other Findings _____

V. VIZHI (EYES)

1. Niram (Venvizhi) (Discolouration)

1. Karuppu (Dark) ☐ 2. Manjal (Yellow) ☐
3. Sivappu (Red) ☐ 4. Velluppu (White) ☐
5. No Discoloration ☐ 6. Thontham ☐

2. Kanneer (Tears) 1. Normal ☐ 2. Increased ☐ 3. Reduced ☐

3. Erichchal 1. Present ☐ 2. Absent ☐
(Burning sensation)
4. Peelai seruthal 1. Present ☐ 2. Absent ☐
(Mucus excrements)

Any Other Findings _____

VI. MEI KURI-SPARISAM (PHYSICAL SIGNS)

1. Veppam 1. Mitham ☐ 2. Migu ☐
(Warmth) (Mild -Vatham) (Moderate-Pitham)
3. Thatpam ☐
(Low-Kabam)
2. Viyarvai 1. Normal ☐ 2. Increased ☐ 3. Reduced ☐
(Sweat)
- Area_____
3. Thodu vali 1. Absent ☐ 2. Present ☐ _____
(Tenderness)

Any Other Findings _____

VII. MALAM (STOOLS)

1. Niram 1. Karuppu ☐ 2. Manjal ☐
(Color) (Dark-Vatham) (Yellowish -Pitham)
3. Sivappu ☐ 4. Velluppu ☐
(Reddish-Pitham) (Pale-Kabam)
2. Sikkal 1. Present ☐ 2. Absent ☐
(Constipation)
3. Sirutthal 1. Present ☐ 2. Absent ☐
(Poorly formed stools)
4. Kalichchal 1. Present ☐ 2. Absent ☐
(Loose watery stools)
5. Seetham 1. Present ☐ 2. Absent ☐
(Watery and mucoid excrements)
6. Vemmai 1. Present ☐ 2. Absent ☐
(Warmth)
7. History of habitual constipation 1. Present ☐ 2. Absent ☐

8. Passing of a) Mucous 1. Yes ☐ 2. No ☐
 b) Blood 1. Yes ☐ 2. No ☐

Any Other Findings _____

VIII. MOOTHIRAM (URINE)

DAY I

(a) NEER KURI (PHYSICAL CHARACTERISTICS)

1. Niram (colour)

Pale yellow	<input type="checkbox"/>	Milky purulent	<input type="checkbox"/>	orange	<input type="checkbox"/>
Red	<input type="checkbox"/>	Greenish	<input type="checkbox"/>	dark brown	<input type="checkbox"/>
Bright red	<input type="checkbox"/>	Black	<input type="checkbox"/>	Brown red or yellow	<input type="checkbox"/>
Colourless	<input type="checkbox"/>	Dark yellow	<input type="checkbox"/>		

2. Manam (odour)

Aromatic	<input type="checkbox"/>
Ammonical	<input type="checkbox"/>
Fruity	<input type="checkbox"/>

Others : _____

3. Edai (Specific gravity)

Normal (1.010-1.025)	:	<input type="checkbox"/>
High Specific gravity (>1.025)	:	<input type="checkbox"/>
Low Specific gravity (<1.010)	:	<input type="checkbox"/>
Low and fixed Specific gravity (1.010-1.012):		<input type="checkbox"/>

4. Alavu(volume)

Normal (1.2-1.5 lt/day)	<input type="checkbox"/>
Polyuria (>2lt/day)	<input type="checkbox"/>
Oliguria (<500ml/day)	<input type="checkbox"/>

5. Nurai(froth)

Froth ☐

Clear ☐

Cloudy ☐

6.Enjal (deposits) : Yes ☐ No ☐

Any Other Findings _____

(b) NEI KURI (oil spreading sign)

TIME:

1. Urine collection:

2. Oil drop:

3. Picture taken: shape

1minute: -----

3minutes: -----

5minutes: -----

7minutes: -----

10minutes: -----

DAY II -

VIII. MOOTHIRAM (URINE)

(a) NEER KURI (PHYSICAL CHARACTERISTICS)

1. Niram (colour)

Pale yellow	<input type="checkbox"/>	Milky purulent	<input type="checkbox"/>	orange	<input type="checkbox"/>
Red	<input type="checkbox"/>	Greenish	<input type="checkbox"/>	dark brown	<input type="checkbox"/>
Bright red	<input type="checkbox"/>	Black	<input type="checkbox"/>	Brown red or yellow	<input type="checkbox"/>
Colourless	<input type="checkbox"/>	Dark yellow	<input type="checkbox"/>		

2. Manam (odour)

Aromatic ☐

Ammonical ☐

Fruity ☐

Others : _____

3. Edai (Specific gravity)

Normal (1.010-1.025) : ☐

High Specific gravity (>1.025) : ☐

Low Specific gravity (<1.010) : ☐

Low and fixed Specific gravity (1.010-1.012): ☐

4. Alavu(volume)

Normal (1.2-1.5 lt/day) ☐

Polyuria (>2lt/day) ☐

Oliguria (<500ml/day) ☐

5. Nurai(froth)

Froth ☐

Clear ☐

Cloudy ☐

6.Enjal (deposits) : Yes ☐ No ☐

Any Other Findings _____

(b) NEI KURI (oil spreading sign)

TIME:

1. Urine collection:

2. Oil drop:

3. Picture taken: shape

1minute: -----
 3minutes: -----
 5minutes: -----
 7minutes: -----
 10minutes: -----

DAY III -

VIII. MOOTHIRAM (URINE)

(a) NEER KURI (PHYSICAL CHARACTERISTICS)

1. Niram (colour)

Pale yellow	<input type="checkbox"/>	Milky purulent	<input type="checkbox"/>	orange	<input type="checkbox"/>
Red	<input type="checkbox"/>	Greenish	<input type="checkbox"/>	dark brown	<input type="checkbox"/>
Bright red	<input type="checkbox"/>	Black	<input type="checkbox"/>	Brown red or yellow	<input type="checkbox"/>
Colourless	<input type="checkbox"/>	Dark yellow	<input type="checkbox"/>		

2. Manam (odour)

Aromatic

☐

Ammonical

☐

Fruity

☐

Others : _____

3. Edai (Specific gravity)Normal (1.010-1.025) : ☐High Specific gravity (>1.025) : ☐Low Specific gravity (<1.010) : ☐Low and fixed Specific gravity (1.010-1.012): ☐**4. Alavu(volume)**Normal (1.2-1.5 lt/day) ☐Polyuria (>2lt/day) ☐Oliguria (<500ml/day) ☐**5. Nurai(froth)**Froth ☐Clear ☐Cloudy ☐**6.Enjal (deposits)**

Yes

No

☐☐

Any Other Findings _____

(b) NEI KURI (oil spreading sign)

TIME:

1. Urine collection:

2. Oil drop:

3. Picture taken: shape

1minute: -----

3minutes: -----

5minutes: -----

7minutes: -----

10minutes: -----

[2]. MANIKADAI NOOL (Wrist circummetric sign) : Right _____ fbs

Left _____ fbs

[3]. THATHUVA IYALPU:

MANO THATHUVAM

Sathuva Gunam ☐

Rajo Gunam ☐

Thamo Gunam ☐

4.. YAKKAI (SOMATIC TYPES)

Vatha constitution	Pitha constitution	Kaba constitution
Lean and lanky built <input type="checkbox"/>	Thin covering of bones and joints <input type="checkbox"/>	Plumpy joints and limbs <input type="checkbox"/>
Hefty proximities of limbs <input type="checkbox"/>	by soft tissue	Broad forehead and chest <input type="checkbox"/>
Cracking sound of joints on walking <input type="checkbox"/>	Always found with warmth, sweating and offensive body odour <input type="checkbox"/>	Sparkling eyes with clear sight <input type="checkbox"/>
Dark and thicker eye lashes <input type="checkbox"/>	Wrinkles in the skin <input type="checkbox"/>	Lolling walk <input type="checkbox"/>
Dark and light admixed complexion <input type="checkbox"/>	Red and yellow admixed complexion <input type="checkbox"/>	Immense strength despite poor eating <input type="checkbox"/>
Split hair <input type="checkbox"/>	Easily suffusing eyes due to heat and alcohol <input type="checkbox"/>	High tolerance to hunger, thirst and fear <input type="checkbox"/>
Clear words <input type="checkbox"/>	Sparse hair with greying <input type="checkbox"/>	Exemplary character with good memory power <input type="checkbox"/>
Scant appetite for cold food items <input type="checkbox"/>	Intolerance to hunger, thirst and heat <input type="checkbox"/>	More liking for sweet taste <input type="checkbox"/>
Poor strength despite much eating <input type="checkbox"/>	Inclination towards perfumes like sandal <input type="checkbox"/>	Husky voice <input type="checkbox"/>
Loss of libido <input type="checkbox"/>	Slender eye lashes <input type="checkbox"/>	
In generosity <input type="checkbox"/>	Pimples and moles are plenty <input type="checkbox"/>	
Sleeping with eyes half closed <input type="checkbox"/>		

RESULTANT SOMATIC TYPE: _____

[5]. IYMPORIGAL /IYMPULANGAL
(Penta sensors and its modalities)

	1. Normal	2. Affected	
1. Mei (skin)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Vaai (Mouth/ Tongue)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Kan (Eyes)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Mookku (Nose)	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Sevi (Ears)	<input type="checkbox"/>	<input type="checkbox"/>	_____

[6]. KANMENTHIRIYANGAL /KANMAVIDAYANGAL
(Motor machinery and its execution)

	1. Normal	2. Affected	
1. Kai(Hands)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.Kaal (Legs)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Vaai (Mouth)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Eruvai (Analepy)	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Karuvaai (Birth canal)	<input type="checkbox"/>	<input type="checkbox"/>	_____

[7] UYIR THATHUKKAL

A. VALI

	1. Normal	2. Affected	
1. Praanan (Heart centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Abaanan (Matedial of muladhar centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Samaanan (Navel centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Udhaanan (Forehead centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Viyaanan (Throat centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____

6. Naahan (Higher intellectual function)	<input type="checkbox"/>	<input type="checkbox"/>	_____
7. Koorman (Air of yawning)	<input type="checkbox"/>	<input type="checkbox"/>	_____
8. Kirukaran (Air of salivation)	<input type="checkbox"/>	<input type="checkbox"/>	_____
9. Devathathan (Air of laziness)	<input type="checkbox"/>	<input type="checkbox"/>	_____
10. Dhananjeyan (Air that acts on death)	<input type="checkbox"/>	<input type="checkbox"/>	_____

B. AZHAL

	1. Normal	2. Affected
1. Anala pittham (Gastric juice)	<input type="checkbox"/>	<input type="checkbox"/> _____
2. Prasaka pittham (Bile)	<input type="checkbox"/>	<input type="checkbox"/> _____
3. Ranjaka pittham (Haemoglobin)	<input type="checkbox"/>	<input type="checkbox"/> _____
4. Aalosaka pittham (Aqueous Humour)	<input type="checkbox"/>	<input type="checkbox"/> _____
5. Saathaka pittham (Life energy)	<input type="checkbox"/>	<input type="checkbox"/> _____

C. IYYAM

	1. Normal	2. Affected	
1. Avalambagam (Serum)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Kilethagam (saliva)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Pothagam (lymph)	<input type="checkbox"/>	<input type="checkbox"/>	_____

4. Tharpagam (cerebrospinal fluid) ☐ ☐ _____
5. Santhigam (Synovial fluid) ☐ ☐ _____

8] UDAL THATHUKKAL:

A. SAARAM:

INCREASED SAARAM (CHYLE)	DECREASED SAARAM(CHYLE)
Loss of appetite <input type="checkbox"/>	Loss of weight <input type="checkbox"/>
Excessive salivation <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Loss of perseverance <input type="checkbox"/>	Dryness of the skin <input type="checkbox"/>
Excessive heaviness <input type="checkbox"/>	Diminished activity of the sense organs <input type="checkbox"/>
White musculature <input type="checkbox"/>	
Cough, dyspnoea, excessive sleep <input type="checkbox"/>	
Weakness in all joints of the body <input type="checkbox"/>	

Normal ☐ Abnormal ☐

B.CENNEER:

INCREASED CENNEER(BLOOD)	DECREASED CENNEER(BLOOD)
Boils in different parts of the body <input type="checkbox"/>	Anemia <input type="checkbox"/>
Anorexia <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Mental disorder <input type="checkbox"/>	Neuritis <input type="checkbox"/>
Splenomegaly <input type="checkbox"/>	Lassitude <input type="checkbox"/>
Colic pain <input type="checkbox"/>	Pallor of the body <input type="checkbox"/>
Increased pressure <input type="checkbox"/>	
Reddish eye and skin <input type="checkbox"/>	
Jaundice <input type="checkbox"/>	
Haematuria <input type="checkbox"/>	

Normal ☐ Abnormal ☐

C.OON:

INCREASED OON (MUSLE)	DECREASED OON (MUSLE)
Cervical lymphadenitis <input type="checkbox"/>	Impairment of sense organs <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Joint pain <input type="checkbox"/>
Tumour in face ,abdomen, thigh, genitalia <input type="checkbox"/>	Jaw, thigh and genitalia gets shortened <input type="checkbox"/>
Hyper muscular in the cervical region <input type="checkbox"/>	

Normal ☐ Abnormal ☐

D.KOZHUPPU:

INCREASED KOZHUPPU (ADIPOSE TISSUE)	DECREASED KOZHUPPU (ADIPOSE TISSUE)
Cervical lymph adenitis <input type="checkbox"/>	Pain in the hip region <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Disease of the spleen <input type="checkbox"/>
Tumour in face, abdomen, thigh, genitalia <input type="checkbox"/>	
Hyper muscular in the cervical region <input type="checkbox"/>	
Dyspnoea <input type="checkbox"/>	
Loss of activity <input type="checkbox"/>	

Normal ☐ Abnormal ☐

E.ENBU:

INCREASED ENBU (BONE)	DECREASED ENBU (BONE)
Growth in bones and teeth <input type="checkbox"/>	Bones diseases <input type="checkbox"/> Loosening of teeth <input type="checkbox"/> Nails splitting <input type="checkbox"/> Falling of hair <input type="checkbox"/>

Normal ☐

Abnormal ☐

F.MOOLAI:

INCREASED MOOLAI (BONE MARROW)	DECREASED MOOLAI (BONE MARROW)
Heaviness of the body <input type="checkbox"/> Swollen eyes <input type="checkbox"/> Swollen phalanges chubby fingers <input type="checkbox"/> Oliguria <input type="checkbox"/> Non healing ulcer <input type="checkbox"/>	Osteoporosis <input type="checkbox"/> Sunken eyes <input type="checkbox"/>

Normal ☐

Abnormal ☐

G.SUKKILAM/SURONITHAM:

INCREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)	DECREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)
Infatuation and lust towards women / men <input type="checkbox"/> Urinary calculi <input type="checkbox"/>	Failure in reproduction <input type="checkbox"/> Pain in the genitalia <input type="checkbox"/>

Normal ☐

Abnormal ☐

[9] DHASANAADI

	1. Normal	2. Affected
1.Idagalai	<input type="checkbox"/>	<input type="checkbox"/> _____
2.Pingalai	<input type="checkbox"/>	<input type="checkbox"/> _____
3.Suzhumunai	<input type="checkbox"/>	<input type="checkbox"/> _____
4.Siguvai	<input type="checkbox"/>	<input type="checkbox"/> _____
5.Purudan	<input type="checkbox"/>	<input type="checkbox"/> _____
6.Kaanthari	<input type="checkbox"/>	<input type="checkbox"/> _____
7.Atthi	<input type="checkbox"/>	<input type="checkbox"/> _____
8.Alambudai	<input type="checkbox"/>	<input type="checkbox"/> _____
9.Sangini	<input type="checkbox"/>	<input type="checkbox"/> _____
10.Kugu	<input type="checkbox"/>	<input type="checkbox"/> _____

10.KOSANGAL

	1. Normal	2. Affected
1.Annamayakosam	<input type="checkbox"/>	<input type="checkbox"/> _____
2.Praanamaya kosam	<input type="checkbox"/>	<input type="checkbox"/> _____
3.Manomayakosam	<input type="checkbox"/>	<input type="checkbox"/> _____
4.Vignanamayakosam	<input type="checkbox"/>	<input type="checkbox"/> _____
5.Anandhamayakosam	<input type="checkbox"/>	<input type="checkbox"/> _____

[11] MUKKUTRA MIGU GUNAM

I. Vali Migu Gunam

1. Emaciation ☐
2. Complexion – blackish ☐
3. Desire to take hot food ☐
4. Shivering of body ☐
5. Abdominal distension ☐
6. Constipation ☐
7. Insomnia ☐
8. Weakness ☐
9. Defect of sense organs ☐
10. Giddiness ☐
11. Lack of interest ☐

II. Vali Kurai Gunam

1. Body pain ☐
2. Diminished voice ☐
3. Diminished work ☐
4. Delirium ☐
5. Arivu mangal ☐
6. Features of increased Kapha ☐

III. Pitham Migu Gunam

1. Yellowish discolouration of skin ☐
2. Yellowish discolouration of the eye ☐
3. Yellow coloured urine ☐
4. Yellowishness of faeces ☐

- 5. Increased appetite ☐
- 6. Increased thirst ☐
- 7. Burning sensation over the body ☐
- 8. Sleep disturbance ☐

IV. Pitham Migu Gunam

- 1. Indigestion ☐
- 2. Chillness ☐
- 3. Discolouration ☐
- 4. Disranged Kapha ☐

V. Kapham migu gunam

- 1. Increased salivary secretion ☐
- 2. Reduced activeness ☐
- 3. Heaviness of the body ☐
- 4. Body colour–fair complexion ☐
- 5. Chillness of the body ☐
- 6. Reduced appetite ☐
- 7. Eraippu ☐
- 8. Increased sleep ☐

VI. Kapham migu gunam

- 1. Giddiness ☐
- 2. Loss of fluid in the Joints ☐
- 3. Increased Sweating ☐
- 4. Palpitations ☐

[12]. **NOIUTRA KALAM**

1. Kaarkaalam
(Aug15-Oct14)

☐

2.Koothirkaalam
(Oct15-Dec14)

☐

3. Munpanikaalam
(Dec15-Feb14)

☐

4.Pinpanikaalam
(Feb15-Apr14)

☐

5. Ilavanirkaalam
(Apr15-June14)

☐

6.Muthuvenirkaalam
(June15-Aug14)

☐

[13]. **NOI UTRA NILAM**

1. Kurunji
(Hilly terrain)

☐

2. Mullai
(Forest range)

☐

3. Marutham
(Plains)

☐

4. Neithal
(Coastal belt)

☐

5. Paalai
(Desert)

☐

[14].Date of Birth

[15]. Time of Birth

AM

PM

[16]. Place of Birth:

[17]. **Rasi (Zodiac Sign)**

1. Mesam

☐

2. Rishabam

☐

3.Midhunam

☐

4. Katakam

☐

5. Simmam

☐

6.Kanni

☐

7.Thulam

☐

8.Viruchiam

☐

9.Dhanusu

☐

10. Maharam

☐

11.Kumbam

☐

12. Meenam

☐

[18]. Natchathiram(birth stars):

1. Aswini	<input type="checkbox"/>	2.Barani	<input type="checkbox"/>	3.Karthikai	<input type="checkbox"/>
4.Rohini	<input type="checkbox"/>	5.Mirugaseeradam	<input type="checkbox"/>	6. Thiruvathirai	<input type="checkbox"/>
7. Punarpoosam	<input type="checkbox"/>	8. Poosam	<input type="checkbox"/>	9. Ayilyam	<input type="checkbox"/>
10. Makam	<input type="checkbox"/>	11.Pooram	<input type="checkbox"/>	12. Utthiram	<input type="checkbox"/>
13. Astham	<input type="checkbox"/>	14.Chithirai	<input type="checkbox"/>	15. Swathi	<input type="checkbox"/>
16. Visakam	<input type="checkbox"/>	17. Anusam	<input type="checkbox"/>	18.Kettai	<input type="checkbox"/>
19 Moolam	<input type="checkbox"/>	20. Pooradam	<input type="checkbox"/>	21. Uthiradam	<input type="checkbox"/>
22.Thiruvonam	<input type="checkbox"/>	23.Avittam	<input type="checkbox"/>	24. Sadayam	<input type="checkbox"/>
25.Poorattathi	<input type="checkbox"/>	26.Uthirattathi	<input type="checkbox"/>	27.Revathi	<input type="checkbox"/>
28. Not Known	<input type="checkbox"/>				

Date :

signature of Lecturer:

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

**DEPARTMENT OF NOI NAADAL
A STUDY ON NEERKKURI NEIKKURI DIAGNOSTIC
METHODOLOGY IN UTHIRAVATHASURONITHAM-
RHEUMATOID ARTHRITIS**

Form –III

LABORATORY INVESTIGATION

HEMATOLOGY :

Hemoglobin :gm %

Total RBC count :millions cells / cu.mm

Total WBC count :cells / cu.mm

Differential count:

Polymorphs :%

Lymphocytes :%

Monocytes :%

Basophils ;%

Eosinophils :%

Platelet count : lakhs cells / cu.mm

ESR (mm) ½ Hr :

1 Hr :

BIO CHEMISTRY

Sugar (F) :mg%

PP :mg%

Total cholesterol :.....mg %

HDL :..... mg %

LDL :.....mg %

VLDL :..... mg%

TGL :..... mg%

Uric acid :..... mg %

Renal function test:

Urea :..... mg %

Creatinine :.....mg %

Liver function test:

SGOT :.....IU

SGPT :.....IU

Alkaline phosphatase :.....IU

Serum Total Protein :gm %

Serum Albumin :.....gm %

Serum Globulin :.....gm %

URINALYSIS:

Physical :

Colour :

Appearance :

Specific Gravity :

Ph :

Odour :

Chemical:

Protein :

Glucose :

Ketones :

Bile salts :

Bile pigments :

Urobilinogen :

Occult blood :

Microscopic:

Deposits :

MOTION :

Ova :

Cyst :

Occult blood :

SPECIFIC INVESTGATIONS

CRP :

RA factor :

ASO titre :

OTHERS

RADIOLOGICAL INVESTIGATIONS

X Ray of affected joints (AP and Lat view):

Date:

Signature of the Doctor:

NATIONAL INSTITUTE OF SIDDHA , CHENNAI-47

DEPARTMENT OF NOI NAADAL

**A STUDY ON NEERKKURI NEIKKURI DIAGNOSTIC
METHODOLOGY IN UTHIRAVATHASURONITHAM-
RHEUMATOID ARTHRITIS**

REGISTER NO:32103205 (2010-2013)

FORM IV A

INFORMED WRITTEN CONSENT FORM

Iexercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled “A Study on Neerkkuri Neikkuri Diagnostic Methodology in Uthiravathasuronitham- Rheumatoid Arthritis”. I may be asked to give urine and blood samples during the study.

I have been informed to about the study to my satisfaction by the investigator and the purpose of this trial and the nature of study and the laboratory investigations. I also give my consent to publish my urine sample photographs in scientific conferences and reputed scientific journals for the betterment of clinical research.

I am also aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

NAME OF THE VOLUNTEER :

SIGNATURE OR THUMB IMPRESSION

OF THE VOLUNTEER :

SIGNATURE OF INVESTIGATOR :

DATE:

SIGNATURE OF LECTURER

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47.

நோய் நாடல் துறை

“உதிரவாதசுரோணிதத்தில் நீர்க்குறி நெய்க்குறி பற்றிய ஆய்வு”

பதிவு எண்-32103205 (2010-2013)

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் - ந்த ஆய்வை குறித்த அனைத்து விபரங்களையும்
நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி :

கையொப்பம் :

- டம்:

பெயர் :

நோயாளியின் ஒப்புதல்

நான், _____ என்னுடைய சுதந்திரமாக
தேர்வு செய்யும் உரிமையைக் கொண்டு - ந்கு தலைப்பிடப்பட்ட
“உதிரவாதசுரோணிதத்தில் நீர்க்குறி நெய்க்குறி பற்றிய ஆய்வு” யை
கணிப்பதற்கான மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல்
அளிக்கிறேன்.

என்னிடம் - ந்தமருத்துவ ஆய்வின் காரணத்தையும்,
மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில்
ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

இந்த ஆய்வில் எடுக்கப்படும் எனது சிறுநீர் புகைப்படங்களை
கட்டுரைகளில் வெளியிட ஒப்புதல் அளிக்கிறேன்

நான் - ந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும்
கூறாமல், எப்பொழுது வேண்டுமானாலும் - ந்த ஆய்விலிருந்து என்னை
விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

தேதி:

கையொப்பம்

- டம்:

பெயர் :

தேதி :

சாட்சிக்காரர் கையொப்பம்:

- டம்:

பெயர் :

உறவுமுறை:

NATIONAL INSTITUTE OF SIDDHA , CHENNAI-47

DEPARTMENT OF NOI NAADAL

A STUDY ON NEERKKURI NEIKKURI
DIAGNOSTIC METHODOLOGY IN
UTHIRAVATHASURONITHAM- RHEUMATOID
ARTHRITIS

REGISTER NO:32103205 (2011-2013)

FORM - IV-E

SUBJECT INFORMATION SHEET

PURPOSE OF RESEARCH AND BENEFITS:

The diagnostic research study in which your participation is proposed to assess the accuracy of the Neikkuri procedure adopted in UTHIRAVATHASURONITHAM patients. It is expected that you would benefit from this study. Knowledge gained from this study would be of benefit to patients suffering from such conditions for the diagnosis and prognosis.

STUDY PROCEDURE:

You will be interviewed and examined as OP and IP patients at the study centre. At the first visit the physician will conduct a brief physical examination and assess the condition followed by blood pressure and routine blood and urine analysis. After matching the inclusion criteria you will be included in this study and neikuri procedure is done by the collection of your urine sample again.

POSSIBLE RISK:

During this study there may be a minimum pain to you while drawing blood sample.

CONFIDENTIALITY:

Your medical records will be treated with confidentiality and will be revealed only to other doctors / scientists. The results of this study may be published in a scientific journal, but you will not be identified by your name.

YOUR PARTICIPATION AND YOUR RIGHTS:

Your participation in this study is voluntary and you may be withdrawn from this study anytime without having to give reasons for the same. You will be informed about the findings that occur during the study. If you do agree to take part in this study, your health record will need to be made available to the investigators. If you don't wish to participate at any stage, the level of care you receive will in no way be affected.

The Ethics committee cleared the study for undertaking at OPD and IPD, NIS. Should any question arise with regards to this study you contact following person

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை47.

நோய் நாடல் துறை

“உதிரவாதசுரோணிதத்தில் நீர்க்குறி நெய்க்குறி பற்றிய ஆய்வு”

நோயாளியின் தகவல் படிவம்

ஆய்வின் நோக்கமும் பயனும்:

தாங்கள் பங்கெடுத்துக் கொள்ளும் “உதிரவாதசுரோணிதத்தில் நீர்க்குறி நெய்க்குறி பற்றிய ஆய்வு” சித்த மருத்துவ முறையில் நோயை கணிப்பதற்கான ஓர் ஆய்வுமுறை. - வ்வாய்வு தங்களின் நோய்கணிப்பை பற்றியும் நோயின் போக்குதன்மை பற்றியும் அறிய உதவும்.

ஆய்வு முறை:

தாங்கள் நேர்காணல் மற்றும் பரிசோதனைகளின் மூலம் உள்நோயாளி, வெளிநோயாளி பிரிவில் ஆய்வு செய்யப்படுவீர்கள். முதல் நேர்காணலின்போது ஆய்வாளரால் உடல் பரிசோதனை, நீர் மற்றும் - ரத்த பரிசோதனை செய்து குறிப்பிட்ட குறிகுணங்கள் - ரூப்பின் - வ்வாய்விற்காக எடுத்துக் கொள்ளப்படுவீர்கள்.

நேரும் உபாதைகள்:

- வ்வாய்வில் - ரத்த பரிசோதனைக்காக - ரத்தம் எடுக்கும்போது சிறிது வலி ஏற்படலாம்.

மந்தணம்:

தங்களின் மருத்துவ ஆவணங்கள் அனைத்தும் மருத்துவர், ஆய்வாளர் அல்லாத பிறரிடம் தெரிவிக்கப்படமாட்டாது.

நோயாளியின் பங்களிப்பும் உரிமைகளும்:

- வ்வாய்வில் தங்களின் பங்களிப்பு தன்னிச்சையானது . - வ்வாய்வில் தாங்கள் ஒத்துழைக்க - யலவில்லையெனில் எப்பொழுது வேண்டுமானாலும் காரணம் எதுவும் கூறாமல் விலகிக்கொள்ளலாம். - வ்வாய்வின்போது அறியப்படும் தகவல்கள் தங்களுக்கு தெரிவிக்கப்படும். நோயாளியின் ஒப்புதலுக்கிணங்க நோய்கணிப்பு விவரங்களை ஆய்வாளர் பயன்படுத்திக்கொள்வார். நோயாளி ஆய்வினிடையே ஒத்துழைக்க மறுத்தாலும் எந்த நிலையிலும் நோயாளியை கவனிக்கும் விதம் பாதிக்கப்பட மாட்டது. நிறுவன நெறிமுறை குழுவும் மேற்கண்ட ஆய்வினை மேற்கொள்ள ஒப்புதல் அளித்துள்ளது. ஆய்வு குறித்த சந்தேகங்கள் - ரூப்பின் கீழ்க்கண்ட நபரை தொடர்பு கொள்ளவும்.



NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: Dr. P. RAMASH. KUMAR..... REG. NO. 32103205

Title: A STUDY ON NEERKURI. NEIKKURI DIAGNOSTIC METHODOLOGY IN
UTHIRAVATHA SURONITHAM / RHEUMATOID ARTHRITIS

No. NIS/IEC/2011/3/37 - 24/12/2011

DECISION

Opinion of the Institutional Ethics Committee – Please Check one

☒ Approval

☐ Modifications required prior to approval (Please specify one space below)

☐ Disapproval

Date of review: _____

K. Manish
(Dr. K. MANICKAVASAKAM)
Member Secretary

Signed: D. Viswanathan (Please print name) Dr. V. SUBRAMANIAN

Chair Person

(Please delete as appropriate, Chairperson, Secretary)

Modifications needed

Modification given to candidate

The research proponent is hereby informed that the Institutional Ethics Committee will require the following:

1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days
2. The progress report to be submitted to the IEC atleast annually
3. Upon completion of the study, a final study status report needs to be submitted to the IEC



The Tamil Nadu Dr. M.G.R. Medical University
69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to

~~Mr / Ms~~ / Dr **P. RAMESH KUMAR**
for participating as a Resource Person / Delegate in the IX Workshop
on **"Research Methodology & Biostatistics"**
for AYUSH Post-Graduates & Researchers
organized by the Department of Siddha
The Tamil Nadu Dr. M.G.R. Medical University
from 24th September 2012 to 28th September 2012.

Dr. N. KABILAN MD (Siddha)
READER, DEPT. OF SIDDHA

Dr. K. SIVASANGEETHA MD
REGISTRAR (FAC)

DR. MAYILVAHANAN NATARAJAN D.Sc.
M.S.Orth. M.Ch.Orth. (I'pool) Ph.D. (Orth. Onco.) FR.C.S. (Eng)
7th VICE CHANCELLOR